DOCUMENT RESUME

ED 097 294 95 SP 008 452

AUTHOR	Dropkin, Ruth, Ed.
TITLE	The Workshop Center SAMPLER, 1974.
INSTITUTION	City Univ. of New York, N.Y. City Coll. Workshop Center for Open Education.
SPONS AGENCY	Ford Foundation, New York, N.Y.; Office of Education (DHEW), Washington, D.C.; Rockefeller Bros. Fund, New York, N.Y.
PUB DATE	May 74
NOTE	88p.
AVAILABLE FROM	The Workshop Center for Open Education, Room 6, Sheppard Hall, City College, Convent Avenue and 140th Street, New York, New York 10031 ($2.00)
EDRS PRICE	MF-$0.75 HC-$4.20 PLUS POSTAGE
DESCRIPTORS	*Class Activities; *Class Management; Elementary Grades; Inservice Teacher Education; *Open Education; Primary Grades; Teacher Programs; *Teacher Workshops

ABSTRACT

In this collection of selected offerings of the Workshop Center for Open Education, workshop leaders, both center staff and consultants, share the notes and references that were part of the sessions held during the first year-and-a-half of the Workshop Center's existence. The presentations, which are a cross-section of the Center's scheduled workshops for that period, emphasize the practical aspects of work in open classrooms, and they should be considered a supplement to the theoretical papers published by the Center. The first chapter focuses on classroom organization and discusses planning, record keeping, and safety. The second chapter presents activities such as woodworking, cooking, drawing, weaving, and printing. The third chapter highlights workshops dealing with curriculum in the language arts, science, and movement and music. The fourth chapter, which is on resources, is divided into five sections: a) people and places for black and Asian-American studies, b) short bibliographies, c) sources for materials and ideas for classroom activities, d) nonsexist books for kindergarten through the third grade, and e) a trip list. A teacher's reaction to the workshops offered at the Center is included in the document. (HMD)

This paper is part of a series of position papers, curriculum bulletins, and occasional papers that *The Workshop Center for Open Education* will publish periodically on subjects relating to open education in the public schools.

The Workshop Center for Open Education is supported by a grant from the United States Office of Education under Title III of the Elementary and Secondary Act of 1965, the Ford Foundation, the Rockefeller Brothers Fund, and City College. It operates in conjunction with the City College Advisory Service to Open Corridors. The Center Staff includes Georgia Delano, *Coordinator;* David Bole, Marian Brooks, Bonnie Brownstein, Stanley Chu, Jean Mandelbaum, Martha A. Norris, Etta Proshansky, Evangeline Richardson, Nancy Schaffer, Loren Weybright, *Advisors;* Ruth Dropkin, Arthur Tobier, *Editors;* and Lillian Weber, *Director.*

Requests for information and publications should be addressed to *The Workshop Center for Open Education,* Room 6, Shepard Hall, City College, Convent Avenue at 140th Street, New York, NY 10031.

Copyright © 1974 by the Workshop Center for Open Education. All rights reserved.

ED 097294

The Workshop Center SAMPLER

1974

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
Ruth Dropkin
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

SP008 432

PUBLISHED BY THE WORKSHOP CENTER FOR OPEN EDUCATION, 6 SHEPARD HALL, CITY COLLEGE
140TH STREET AND CONVENT AVENUE, NEW YORK CITY 10031
MAY 1974

Editor's Note

The workshop is more than the familiar format of lecture/demonstration combined with active encounter with materials and ideas. The workshop is also an experience that lends itself to self-discovery, illuminating as it does the participant's individual way of learning and enabling him not only to relive but to reflect on it. For teachers in particular, the workshop experience is likely to enhance awareness and appreciation of a child's way of learning.

In this collection of selected Workshop Center offerings, workshop leaders -- staff and consultants -- share the notes and references that were part of sessions held during the first year and a half of the Center's existence. These presentations, which make up a fair cross-section of the Workshop Center's scheduled workshops for that period, emphasize the practical aspects of work in open classrooms, and they should be considered a supplement to theoretical discussions in other Center publications.

Teachers and other school people who are making changes for greater support of children's learning will, we hope, find in this publication suggestions for actual classroom use that may serve as a modest guide for their efforts; in fact, we call on them to contribute to future collections. As a brief introduction to the process and content of teaching and learning in open education, this first *Sampler* is meant to point readers in the direction of fuller sources — many of which are listed herein -- and of course, the workshop experience itself.

Ruth Dropkin

Short Bibliographies (continued):

Annotated List for Art Activities 75
Music and Movement 76
Science 77
Math 77
Kites 77
Weaving 78

Sources: Tie-Dye, Batik and Candle Making 78
Math Games 79
Scrap Materials 80

Non-Sexist Books for Grades K-3 82

Trip List 83

A TEACHER'S REACTION -- Wilma Jaffe 86

Contents

I CLASSROOM ORGANIZATION

The Framework -- Lillian Weber	3
"Opening a Corridor -- Lillian Weber	4
Factors to Consider -- Lillian Weber	5
Planning -- Deborah Meier	7
Materials for Areas -- Elli Dumont	11
Record Keeping -- Deborah Meier	13
Safety: Classroom Animals -- Stanley Chu	14
Safety: Cooking -- Elli Dumont	15
Safety: Trips -- Esther Rosenfeld	17

II ACTIVITIES WITH MATERIALS

Weaving -- Evangeline Richardson	19
The Pinhole Camera -- David W. Bole	20
Woodworking -- Stanley Chu	25
Cooking in the Classroom -- Celia Houghton	26
Drawing -- Ilka List	30
Kitemaking -- Loren D. Weybright	41
Printing -- Ilka List	45
Batik -- Stanley Chu	47

III LANGUAGE AND CURRICULUM

Communication -- Lillian Weber	48
Language Games -- Elli Dumont	50
Language and Early Reading -- City College Advisory Service	52
Spelling -- Nancy Schaffer	56
Science Experiences and Materials -- Ruth Howell	58
Terrariums: Woodland, Desert or Marsh -- Bonnie Brownstein	60
A Short Field Trip -- David W. Bole	63
Movement and Music -- Marian Brooks	65
Math: A Study of Fractions -- Ann Peskin	67

IV RESOURCES

People and Places:	Black Studies	71
	Asian-American Studies	72
Short Bibliographies:	Terrariums and Plants	72
	Tie-Dye, Batik and Candle Making	72
	Heterogeneous Grouping	73
	Articles on Testing	73
	Language	74
	Reading and Writing	74
	Art	74

The Framework

Consider these important factors.

- the individual differences of children
- the unevenness of growth processes
- interaction - of children, of adults and children
- interest - the child's

Include as many of these items as possible:

- children's storage
- teacher's storage
- supplies in each area - accessibility of these
- workspace in each area - for groups as well as individual
- privacy - a space for separate individual work
- space for whole group gathering
- space for mucky materials and construction materials
- quiet spaces for reading and language
- relationship of space - social studies - projects and reading
- space for work in progress
- space for display

START AT YOUR OWN PACE

LILLIAN WEBER

"Opening" a Corridor

Parents and teachers who want a change in school organization that would better support a child's active learning should approach the Principal for consent and support. Any voluntary agreement between teachers, parents, and Principals should be made with a clearcut acceptance of the need for study and exploration of the rationale underlying the new organization.

Ordinarily, first steps will include parents' meetings and teachers' meetings, and perhaps the viewing of a movie. A framework of beginning definition and goals is enough. Interested teachers and parents will have already visited open corridors, read, discussed, and even collected materials and thought about curriculum.

A group of teachers of different grade levels who want to work in this way then ask to be placed near each other, and a "corridor" is formed. Every child in these classrooms is there with parental consent. Groups are heterogeneous. The teacher who covers prep periods is included in the planning. The Principal assigns a corridor teacher who works with the corridor classes to produce and encourage use of the total learning environment. It is hoped that an arrangement can be made for steady advisory support, such as exists in Districts 2, 3, 4, and 5 in Manhattan and in District 13 in Brooklyn.

Much preparation must be invested before the teacher is ready to start. The environment in these reorganizations is a changed one, far richer in concrete materials, and the procedures for planning, recording, and schedule are also changed.

City College offers a Masters program in informal education, with courses helpful to teachers making such reorganizations. For information, contact Prof. Miriam Dorn, Room 314, Klapper Hall, City College, Convent Avenue and 136th St., New York, N.Y. 10031. The Workshop Center for Open Education, Room 6, Shepard Hall, Convent Avenue and 140th St., New York, N.Y. 10031, offers a regular program of free workshops along with a library, resources and materials, and other facilities for teachers, supervisors, parents, and all school personnel in the five boroughs.

LILLIAN WEBER

Factors to Consider

The open classroom corridor reorganizations exist *within* the public school system and have brought about changes *within* that. Curriculum changes, planning and recording changes, are not the prime focus in reorganization but flow from the underlying changes in the instructional teaching-learning mode and in the school relationships. Thus, the basic public school achievement expectations for literacy and numerical understanding are accepted but are a minimal factor in the planning of curriculum. Without whole-class teaching, it is possible to support the child at the specific point of his progression and within his style and pace. While a teacher is helping one child or a small group, in special needed ways, other children, the rest of the class, have other experiences. The arrangement of the enriched and varied environment allows the child, at least part of the time, to participate independently in his learning, thus releasing the teacher for support of individual children and their individual needs. Individualized instruction can become a reality. But, more than this, in this mode of teaching-learning, the child's interests, his responses, interrelate and integrate subject matter, and curriculum reflects this interrelatedness and integration. Thus, the changed instructional mode and changed relationship to the child as independent learner makes a difference not only in method, but also in content offered. The aim is that achievement of public school expectations, as much as possible, will result as a by-product of support of the child in pursuit of his interests. The rich environment used by the interested and curious child will support development of numerical understanding and will be talked about, read about, and written about.

The basic point is that the organization of the room is in itself a decision on curriculum. Reorganization of the classroom reflects the teacher's judgment on major areas of the child's interests and needs. It reflects her decisions on how to support these. If the teacher feels it is important for his development that a child have certain experiences, she fills the environment with possibility for just these experiences. Experience is not only of the concrete, important for mathematical and science understanding. Experiencing should also be of music, paintings, stories, poems, people in the environment and their interesting backgrounds and relationships. And the teacher draws attention to particular bits, if and when she wishes. She places these strategically; she "stages" focus. She may, for a while, join the experiencing in a particular area to assist the focus. She may, by not joining, further support the experiencing with suggestions -- with what have been called work cards or activity cards. These may be illustrated suggestion of possibility, addition of new material that poses a problem of use or extends use, a question, or specific task. In addition, she and other children join the child and discuss with him his experiences, react to his understanding, interchange their viewpoints with his. Above all, in order to be able to intelligently *rearrange* the environment, the teacher must, adding to what she has learned from discussion with him of his intent and thinking, *observe what the child does in the environment she has arranged.* Only in this way would she know what the child himself understands and seeks from the environment.

The curriculum and the organization of the room support the child in his finding out about things and in expressing his understandings about what he has found out. Language and number are necessarily used in all areas, sometimes incidentally to the major focus, sometimes *as* the major focus. For working purposes, specific areas unite and concentrate aspects of each curricular focus. Thus, in the language area, provision may be made for listening activities, pleasure reading, typing, writing, language games, reading with a teacher. A mathematics area provides experiences in matching, counting, one-to-one correspondence, measurement, and weighing. Number skills are developed concomitantly. From these experiences grows understanding of mathematical relationships. Specific areas may be reserved for "finding-out" science activities and for various forms of expression such as music and art. The intent is to maximize possibilities for language development and for growth in numerical understanding.

Planning for curriculum in the reorganization is long-range rather than for the presentation of scheduled segments of subject matter. The developmental possibilities of children are the basis of planning the variety of experiences that serve and foster these possibilities. The multiple possibilities of the materials in the environment and the varied and multiple responses to and uses of these by individual children are a further basis. For each child, the plans the teacher makes for focus and extension of experiences will depend on what use, in fact, he makes of the environment and what questions, in fact, he asks about it. Her understanding and awareness of all these factors - developmental, environmental possibility, and the child's interest - are the teacher's guides in her choice of the content and materials which will help her match her choices to the choices the child makes. Thus, the planning and adaptation of this environment-curriculum tries to maintain continuity with the child's earlier active drives for learning, to restimulate or extend them is necessary.

Recording of progress and growth in this context is that of the individual child in his individual context of use of the environment-curriculum.

Evaluation must be in the context of what has been attempted. The changes desired and achieved in the open classroom areas have been defined and described above. An evaluation might ask: Is the environment changed? Has the grouping around common areas begun the process of developing community? Are there changed relationships? Is there easy discussion in a free social atmosphere? Is the instructional mode changed to a teaching support of the child's independent active learning, individual and uneven in style and pace? Has the teacher grown in understanding of how the child uses the environment? And what has the child experienced and understood of his experience? Is the teacher guided by her understanding of this to intelligent adaptations and extensions of the environment? And, in fact, does the child use it? Is he active, curious, independent? Have his earlier drives for learning been kept continuous? Does he approach the environment with questions, does he pursue his own purposes? Are the changes well-developed, just begun, uneven? Evaluative tools to answer such questions have yet to be clearly developed, though regularly spaced observations, diaries, photographic records have been used for assessment.

LILLIAN WEBER

Planning

POSSIBLE SCHEDULES

Phase I:
A.M.

8:45 Meeting area: to go over assignments, expectations, etc.

9:15 INDEPENDENT WORK PERIOD (if 2 adults, 1 "free" and 1 "engaged"). 45 min. of work, 15 min. clean-up (temporary: brief coming together to check up)

10:15 DIRECTED WORK PERIOD - 4 groups

A - ORAL LANGUAGE & MOVEMENT: story telling, oral language games, dramatics, discussion, tape, etc.

B - ART & CONSTRUCTION: exploration of specific materials or specific project or theme.

C - MATH: instruction re use of specific apparatus or new games; and oral group math games to extend or reinforce skills.

D - WRITTEN LANGUAGE: instruction in use of specific language games, phonics materials, assistance in assigned creative writing tasks, reading instruction, etc., also help with handwriting, punctuation, etc.

11:30 MEETING: reporting back, sharing of a.m. activities, focusing on connections, evaluation.

P.M.

1:00 Individual Quiet Period: whispers and sitting only.
Workbooks, readers, skill sheets, etc.

1:30 Skill-oriented activities: spelling, handwriting, computation. Semi-traditional mini-lessons.

2:00 Diary writing time and homework

2:30 MEETING: story-time and "what's for tomorrow" reminders.

The afternoon plan, described above, remains substantially the same for the entire year. Our experience is that the afternoon is a good time for more formal, quiet, routine skill focus. From the beginning it is usually wisest to use the FIRST PERIOD AVAILABLE IN THE MORNING for the MOST independent and "freest" exploration. This should be the time when chatting, sharing, hard thinking, taking initiative, having maximum responsibility, being creative, interacting socially and cooperatively is expected. Both you and the children are in the best shape in

the early morning for the most important and hardest learning tasks.

Meetings: It is probably wise to maintain a "rigid" schedule for such "getting togethers." They are needed to (1) plan ahead, (2) to "pull together" at the end of the morning work time, and (3) at the end of the day for reading aloud and to enhance the sense of community and solidarity of the group.

Suggested distribution of children during INDEPENDENT WORK PERIOD:

Language and writing:	5	
Typewriter:	2	
Listening Center	4	
Library-independent reading:	4	
Quiet table: misc.:	2	
Science work table:	2	
Math area:	6	(4 and 2)
Art & Construction:	6	(4 and 2)
TOTAL:	31	

(If a volunteer is available maybe 2-3 children might be on a trip, in the corridor, using resource room, visiting or working in other classes, etc.)

Alternative areas: A KINDERGARTEN OR FIRST GRADE SHOULD CERTAINLY INCLUDE AT LEAST ONE OR TWO OF THE FOLLOWING AREAS:

Playhouse, dramatics corner, music area,
cooking corner, block area, workbench
sand table, water table.

Suggested materials in areas--aside from books, magazines, pictures, task cards, worksheets, reference material relevant to each area:

ART: paints, craypas, crayons, charcoal, pencils--
clay, plasticine, plaster of paris, play dough--
paste, glue, staplers, string, tacks, nails, tape, wire--
paper of various colors, textures, sizes--incl. cardboard--
decorating materials--buttons, glitter, etc. and construction materials--boxes, tubes, wood scraps, straws, etc. and scissors.

MATH: 1-in. cubes, ships, pegs-pegboard, number boards, assorted blocks, shapes, tangrams, pattern blocks, Dienes blocks, rods, abacus, dice, math games, logic games, and construction kits--Lego, Geo-D-Stix, Tinkertoy, et al.

MATH-SCIENCE MATERIAL: Measuring equipment: rulers, sticks, string, scales and weights, graph paper, timers, various sized containers, thermometers, etc.

SCIENCE: magnifiers of various types, containers, water, sand and other natural materials. Mirrors, magnets, springs, pulleys, funnels.
Electrical gadgets--wires, batters, bulbs, etc.
Gardening equipment for planting.
Animals, cages, animal food. If possible: cooking and chemistry!

LANGUAGE: Board games, dice games, word cards, alphabet cards, phonics games, story-starters.

WRITING: magic markers, colored pencils, blank booklets, printing sets, stamp pads, chalk boards, typewriter and listening center equipment (tape recorder, record player)

LIBRARY AREA: Large variety of readers and reading series (2-3 of each), picture books, story books, dictionaries, encylopedia, atlas, reference books of many sorts, many many magazines (current).

STAGES OF "OPENNESS"

Stage I: The first stage (or phase) should be maintained for a few months, and is primarily to get children used to the materials, ways of working, responsibilities and routines of this kind of classroom. It is a period for making few exceptions, and being quite definite. It might also involve directed assignment even during the INDEPENDENT WORK PERIOD so that children can rotate in the various areas, work with different children, etc.

At first the materials should be limited, with gradual introduction of more materials and more choice.

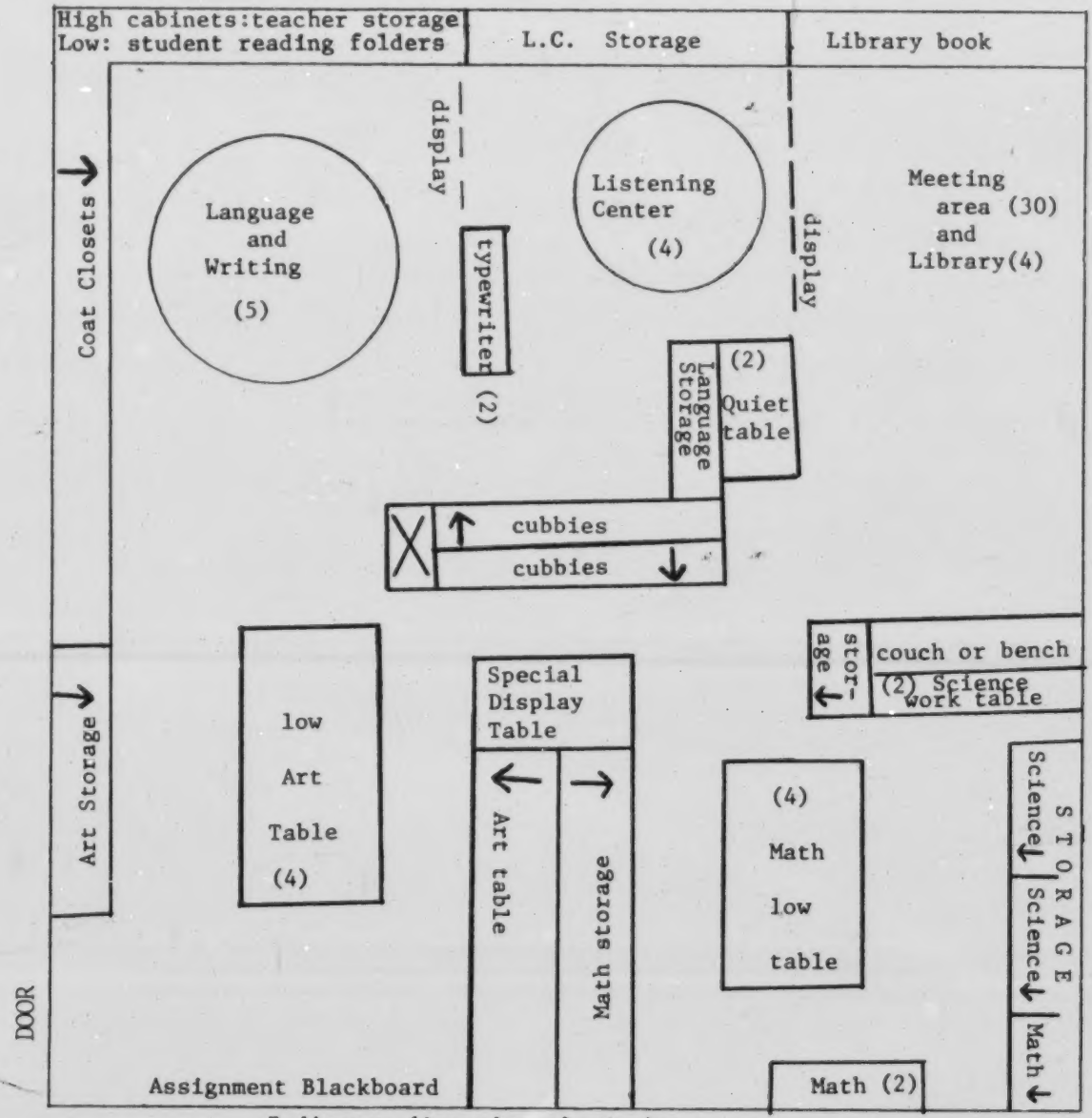
The DIRECTED WORK PERIOD is to introduce and demonstrate ways of working, focusing attention on possibilities. It is a transition between formal and informal. The 4 groupings should be mixed and relatively stable so that the group gets a chance to know each other and work some problems out.

Stage II: After several months of the above plan (or a modification of it that meets the teacher and group's initial needs) an attempt should be made to extend the INDEPENDENT WORK PERIOD and cut back on the DIRECTED ACTIVITIES.

Stage III: This phase may not be achieved in a single year nor ever. But the hope is that at some point both the children and the teacher are able to integrate the whole morning's activities--with various types of exploratory work, small group conferences, individual conferences, projects, etc.

When to try this? When children show evidence of being able to move easily from one activity or area to another, clean up on their own, become involved in work without requiring a lot of supervision, look to each other for assistance rather than always seeking the adults for help, and finally when you, as the adult in charge, feel confident enough of the children, yourself and your methods of observing, recording, planning and managing to work in this way!

A POSSIBLE CLASSROOM ARRANGEMENT



→ : Indicates direction of opening

( ) : suggested maximum number of students in area

— — — : divider (tri-wall?)

cubbies: individual private storage boxes, drawers, etc.

X: place for completed daily work (for teacher's comments)

L. C.: listening center -- could also be used as puppet area, music, even a cooking center

DEBORAH MEIER

Materials for Areas

The following checklist is intended as a *guide* -- not a prescription. It should help you as you look around your room to decide what areas you need to develop further.

Are these materials available for the children's use every day? Are they neatly labelled, in a handy place, within reach of the children? Are they being used?

ART AREA

-- paints, brushes, easel, water, paper
-- clay, play-dough, clay boards or plastic for desk protection
-- scrap materials in a box (cloth, sequins, gilt, yarn, ribbon, buttons)
-- paste, scissors, crayons, chalk
-- finger paint paper, finger paints, water, sponges, newspaper
-- paper and pencils for recording

MATH AREA

-- 6-Balance scale, at least 4 "things" for balancing (in labelled boxes), paper for recording discoveries
-- Cuisenaire rods
-- Geo-boards, colored rubber bands, geo-paper for recording
-- Unifix cubes, numerals, grey trays
-- Pattern or parquetry blocks, plain paper for tracing
-- Discs, disc paper for recording, patterns
-- Attribute blocks
-- Tangrams, cards
-- sets of wooden numerals, felt numerals, sand-paper numerals
-- felt board and felt "things"
-- Equal arm balance with weight (or washers)
-- rulers, tape measures, yard sticks, paper clips, string, ribbon
-- pencils, paper, crayons
-- graph paper (1-inch squares)
-- charts: shapes; numerals & set 1-10; Cuisenaire chart
-- books about numbers, counting books

LIBRARY

-- story books (neatly, attractively arranged)
-- old basal readers
-- children-made
-- comfortable rug or chair or pillows or mattress, etc.
-- paper and pencils

LANGUAGE ARTS/WRITING AREA

-- paper, pencils, crayons, drawing paper, scissors

-- games, puzzles, lottos, etc.
-- felt letters, sandpaper letters, wooden letters
-- magazines
-- blank books
-- boxes of sight words
-- suggestion cards (story-starters, matching games, etc.)
-- pictures
-- charts (color words, current words, action words, etc.)

DRAMA AREA

-- interesting things to spark imagination (a piece of red satin? a fan? a feathered hat? a stethescope? a pair of old glasses without the glass? a string of bright beads? a tin badge?)
-- puppets, puppet stage

Are all of these in use *most* days? If not, why not?

SCIENCE AREA

-- animals, plants
-- magnets, magnifying glass, water
-- books, interesting "things"

HANDWORK AREA

-- needles, thread, yarn
-- dixie mesh, felt, cloth, sequins, buttons
-- ribbon, spools, loops, weaving looms, knitting needles

ELLI DUMONT

Record Keeping

Part of the purpose of record keeping is managerial--to keep track of activities, movement, gaps, etc. It also serves as a reminder to children, a check-up for them.

Part of the purpose is to help children develop a sense of planning, evaluating, self-checking, organization, etc.

Part of the purpose is diagnostic--to help you remember where children are, who works with whom, status of work, needs of individuals.

Part of the purpose is to help you plan for the class--what is used a lot, what new materials are needed.

Part of the purpose is to make records available to supervisors, parents and other teachers regarding the class as a whole and individuals within it.

Additional ideas:

Children can keep an individual log--a notebook with daily entries that can include both personal comments and things learned. It provides a sense of continuity. The teacher should enter comments frequently, in the nature of an exchange, a written dialogue, with suggestions, further thoughts, sharing of ideas. Comments on style, grammar, spelling and handwriting can be noted separately for further attention.

Children and/or teacher should (in the early grades) keep an ongoing reading folder of books and articles read, vocabulary, special problems, conferences, etc.

There should be some place--maybe a pentaflex folder?--for keeping samples of children's ongoing work in all areas.

The teacher should be keeping anecdotal records of individual children's interest, problems, strengths, friendships, projects and styles.

The teacher should be keeping a folder or log of changes in the room, time schedule, ongoing curriculum, plans.

No two people seem to find the same things work for them. Keep trying out schemes until you find one that works for you--one that is simple, that you can refer to, that seems to make sense in HELPING YOU, and that you can in fact maintain.

Regarding individual anecdotal records and diagnostic data, some teachers find it helps to focus on maybe 5 children a week. Some teachers make comments in the children's diaries daily, some weekly, some rotate and look at a few each day. Some teachers have a planned schedule of individual conferences, the number per week depending on the child and the adults available. Some teachers use file boxes to keep notes; others, notebooks.

DEBORAH MEIER

Safety: Classroom Animals

The mutual safety of children and animals should be the first consideration when both are in the classroom. The adults in the room must assume primary responsibility for assuring such safety. It is essential to learn as much as possible about a new classroom pet. Both children and adults can learn together through books and by talking with other teachers familiar with particular animals in the classroom.

An important safety factor is to provide living conditions for an animal that are close to its natural environment. This includes not only the physical surroundings, but also the number of other animals it can comfortably live with. A natural animal environment can keep an animal calm, and also show children the dynamics existing within different surroundings.

The classroom animal environment is almost necessarily a cage. Regular and frequent removal of an animal's urine and feces and absorbent material is a vital factor in maintaining healthful conditions; waste materials should be disposed of in a covered box or trash can. Cages should be given a periodic thorough scrubbing with mild soap and water. Frequency of cleaning can often be determined by one's nose. Hands should be washed before and after cleaning cages.

Many animals are more likely to remain calm when handled if they're brought into the classroom just before being weaned. If possible, avoid handling animals during their first few days in the classroom in order to give them a chance to adjust to new surroundings. Small mammals, such as hamsters, and gerbils, can safely be handled by cupping hands around them and lifting with a cupping motion. Larger mammals need more support at the bottom. While first learning to hold animals, children can sit on the floor and have animals placed in their hands and laps. Properly handled animals are much less likely to bite. Animals should be carried only within certain areas of the room. An area such as that set aside for cooking should obviously be made off-limits. Again, hands should be washed before and after handling animals. This will greatly lessen the transmission of any illness, either to children or to animals. Remember, some animals are susceptible to catching colds from children. Find out which children are allergic to furry animals before they are allowed to hold them. In general, special restrictions need to be explained and enforced for the children.

Carefully watch the habits of your classroom animal. A deviation from its normal behavior may be a strong indication of illness. If you suspect an animal of being sick, take it to a veterinarian. It's a good idea to first ask the vet if he or she is knowledgeable about small mammals. Many are not.

Special safety precautions must be taken if wild animals are brought into the classroom. Having been caught, wild animals are quite likely to be injured, sick, or genetically defective. Also, as young wild animals become sexually mature, they can inflict serious injuries to children.

STANLEY CHU

Safety: Cooking

Before you even begin any cooking activity, please ask yourself these important questions:

1. Is your hot-plate or other electrical equipment adequately wired -- no frayed cords?
2. Are the pots and pans properly balanced and the right size for the hot-plate -- to avoid the danger of tipping?
3. Are you sure there are no flammable items near the hot-plate -- papers, books, clothing?
4. Are all extension cords the correct type, and out of the way -- running in back of the tables?
5. Is the hot-plate on a sturdy, steady table or counter where there is no danger of its falling -- or someone leaning against it?
6. Do you know what to do in case of a flare-up or fire? If someone's clothing caught fire or if someone got splashed with hot oil, have you thought about what you would do? Decide now.

Here are some things you *must* do in order to ensure the safety of the children. Cooking needs to be carefully structured:

- Make sure to have appropriate and safe equipment.
- Post rules for safety and sanitary precautions and discuss them with the children -- often.
- Make sure children understand that cooking is not a playtime; children will use utensils properly and carefully if they are taught how. *Teach* children how to:
  - cut with sharp knives
  - use a sharp peeler or corer
  - handle a hot pot
  - stir without spattering
  - place pans carefully on burners
  - turn off the hot plate

Some suggested rules for children:

1. Use knife properly. Put it back in a safe place as soon as you are finished with it.
2. Use pot holders to pick up pans.
3. Watch the handle of the pan. Don't let it stick out.

Some good ideas:

- A sign displayed prominently that says "Hot-Plate is ON!"
- A sign-up or check-off sheet for cooking -- to keep things organized fairly
- A handy kit of some scouring powder, sponge, scouring pad, paper towels -- for clean-up
- Putting a metal lunch tray in back of the hot plate to reduce risks of fire

and splattering.

There are lots of nice recipes and projects for children -- muffins, puddings, cookies, etc. Some things are *inappropriate* for children except with *very careful* adult supervision -- e.g., deep frying in hot oil, melting hot wax for batik. Think ahead before letting children get involved in projects that are potentially risky!

Cleanliness is more important than ever in open classrooms where children are involved in so many real-life experiences. Make sure to:

- keep cooking away from sand, water play, animals and large movement activity areas (for safety and sanitation)
- keep cooking area and utensils hot-water-and soap clean
- keep foodstuff carefully covered and wrapped

ELLI DUMONT

Safety: Trips

PREPARATION IN CLASSROOM

1. Permission slips (general - for the year; specific - for each trip)
2. Subway pass or other mode of transportation prepared for in advance: Check school/district regulations
3. Adult supervision during trips:
   a) young children: 1 adult per 5 children
   b) older children: 1 adult per 10 children
   c) always try to get one more adult than you think necessary
4. Check and follow trip procedures for your school:
   a) trip book - sign out day of trip
   b) tape trip form to classroom door giving trip information on day of trip
5. *Safety:*
   a) Role play trip routines in classroom.
   b) Establish *need* for and *routines* of:
      - walking in street - children should keep to one side of sidewalk as a matter of courtesy to other pedestrians
      - waiting at corner until signal is given to cross street
      - crossing street as a group - adults at each end of group making sure each child has crossed safely
      - going down to subway - walking in single file usually is safest and fastest way
      - waiting at platform for train - in small groups - facing the platform with an adult
      - entering a train - adult holds door with back - makes sure all children are in train before she steps away from door
      - sitting or standing on train - again in small groups with adult leader
      - leaving train - again adult holds door - makes sure all children have left station before class leaves - teacher tells children to get ready.
   c) Set up signals so that children will respond in all situations.
6. Quick routines to be established for:
   a) counting children
   b) counting of monies
   c) lunch, water and bathroom needs
   d) first-aid

SAFETY DURING A TRIP

1. Buddy system: two children responsible for each other.
2. Teacher should bring: tissues, bandaids, wet cloth in plastic bag, thermos of cool water on hot days.
3. Adult supervision:
   a) divide class evenly among the adults who will accompany class
   b) each adult responsible for her group
   c) teacher prepares list of children for adult in advance
   d) some preparation should be made for the adults so that they will be knowledgeable to some extent about the nature of the trip, reason for

going, etc.

4. For young children: prepare a name tag with general school information (address and telephone number) as well as destination of trip.
5. Older children should know: destination of trip, subway station (entering, leaving), route of train, address and phone number of school.
6. Parents should know: date, time, destination of trip, and time expected to return.

WHO CAN TAKE CHILDREN ON TRIPS

1. Classroom teacher (with adult supervision)
2. Apprentice teacher -- mini-trips of no more than six children
3. Parent -- mini-trips of no more than six children
4. Student teacher -- mini-trips of no more than six children - *only in the neighborhood*, to a store, walking trip, or to the yard
5. Paraprofessional -- mini-trips of no more than six children

DISTRICT BUS SAFETY PROCEDURES

1. Check with the driver and see what he will allow.
2. As a rule children should not stand and walk around the bus while it is moving.
3. Ask driver if singing children will disturb him.
4. Expect children to modulate their voices.
5. If driver allows children to eat lunch on bus, clean-up is very important.
6. Establish procedures for getting on and leaving bus -- which side to leave first, single file for getting on, etc.
7. Again, establishing signals for trips is very useful.

TEACHER PREPARATION

1. If possible - a pre-trip made by the teacher (museums, exhibits, parks, zoos, etc.)
2. Planning in advance for lunch, bathroom needs, water, etc.
3. Many children's theatres do not start on time; teacher should have children bring: pad and pencil for tic-tac-toe games and the like, books to read, something to munch on so that the time passes quickly.
4. Routing out of trip so that if more than one train is to be used, the teacher knows each step of trip to avoid confusion and strain.

ESTHER ROSENFELD

Weaving

Weaving is an ancient art. In every period of history weaving techniques have been used as art forms as well as for the practical purpose of producing cloth.

For a child, weaving may reinforce his own perception of pattern as well as give him freedom to invent, to combine and to create his own patterns, to explore the many fascinating possibilities inherent in this form of expression. It may serve as a means of opening up the child's verbal exploration or at least of offering alternatives clear enough for him to exercise a real choice.

The weaving process involves the interlaying of threads at right angles to each other. The *warp* consists of vertical threads making the structural skeleton for weaving. The *weft*, which is made up of horizontal fibers woven through the warp, may provide a challenge to fuse ideas, material and function into an aesthetic whole.

"The quality of weaving is determined by color, texture, space, line, shape and rhythm. No one of these stands alone, all work together to form a harmonious whole." (Larita R. Rainey in *Weaving Without a Loom.*)

Our workshops in weaving minimize complicated devices and terminology and focus on simple weaving variations. Our aim is to help participants develop a creative approach with methods and materials and to provide examples that will encourage the weaver to develop a personal approach to weaving. Such examples may come from many sources: materials, design, techniques, and the environment itself.
Weave without a loom, using *paper, scrim, burlap, straws, wire, cotton mesh.*
Weave, using simple looms made of:

Heavy cardboard. Using any shape and size, draw a line along top and bottom of the cardboard about a half inch from the edge. Cut slits from edge to this line, about a half inch apart. Anchor the warp in the top slits, and stretch the fibers to the bottom of the cardboard. Another method is to attach the warp to a cardboard frame. This permits working from both front and back of the weaving. Cut four strips of cardboard. Make slits in the two pieces used for top and bottom of the frame, making sure that there are an equal number of slits on each side. Staple the four pieces of cardboard together, pointing slits outward so that they serve as serrations through which the warp can be looped. Pull the warp just tight enough so that it will lie flat on the frame.

Wood frames. Use four strips of wood nailed together to form a loom. Place small nails at equal intervals at top and bottom, and tie the warp to the first nail at the top. Pull it down and around the first nail at the bottom, and up again to the top of the next top nail, stretching the warp top and bottom until all the nails are used.

Experiment with unusual weft materials. Try combining tissue paper, wool and string. Use strips of synthetic leathers, reed, cards and dried grasses. Search through scraps and nature sources.

EVANGELINE RICHARDSON

The Pinhole Camera

(with a pattern for making one)

HOW DOES IT WORK?

If you hold a plain white card in front of you, pointed toward objects you can see, then light reflecting from all those objects will fall on all of the front surface of that card. The result is that the card will appear plain white. (See Figure A.)

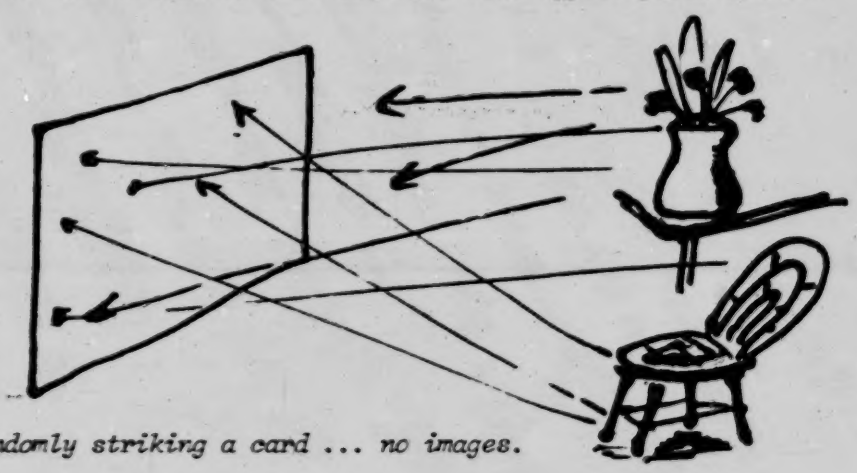


Figure A
Reflected light randomly striking a card ... no images.

But if the light from each of those objects were made to fall on separate areas of the card, then images of each of those objects would appear in those areas. This can be done by placing a barrier in front of the card which has a small hole in it for the light to pass through. (See Figure B.)

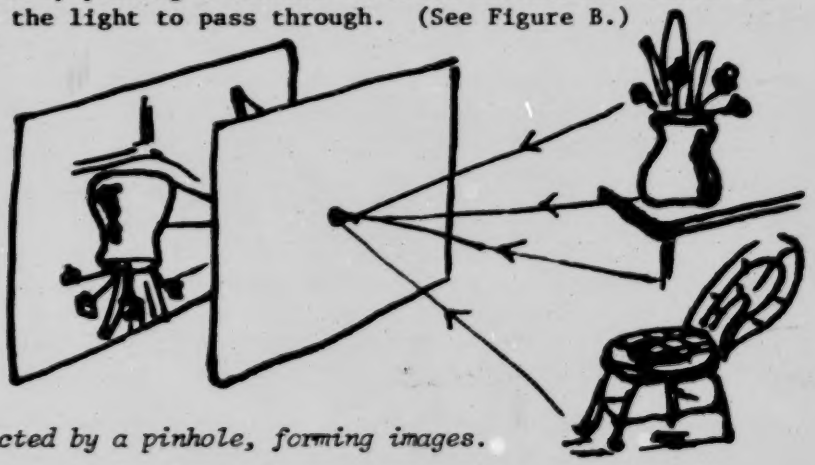


Figure B
Reflected light restricted by a pinhole, forming images.

If the hole is as big as a pencil's diameter, the light from each object still has some opportunity to enter the hole at different points and hit the card at a variety of points, but not spread too much. The result is separate images, but ones with fuzzy edges.

If the hole is very small (as the tip of a needle) the light must travel through it with little deviation from a straight line path, forming separate images with sharp edges.

Finally, if the card and the barrier with a hole in it are part of a box, so that stray light is kept out, a clear image will form on the card with no other light interfering. And if a piece of photographic enlarging paper has been placed over the card, facing the pinhole, then the images will be permanently formed on the paper.

Upon development, one then has a paper negative: a picture of the scene in front of the camera, but with the black and white areas reversed, reversed because the paper darkens in the developer where light passing through the pinhole hit it.

The last step is to make a contact print from the paper negative, producing a paper positive print. This print will be the same size, but with the black and white areas reversed again to their natural appearance.

HOW CAN I MAKE A CAMERA?

This, finally, is the easy part. In case you got lost before the end of the explanation of how one works, rest assured that it's easier to make and use a camera than to understand it.

First of all, any box that keeps out light will work; any size, shape or construction will do, just so it's lighttight. Therefore, the best box is one whose lid comes all the way down the sides to the bottom. Find a box like this and you're all set.

While there are no special dimensions for the pinhole camera, the pictures will vary depending on which side you place the hole and where you place the print paper.

For example:

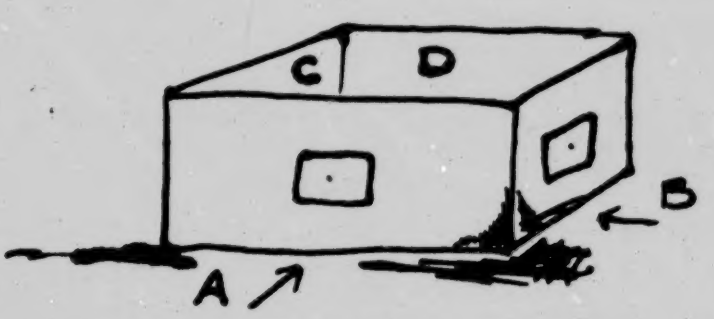


Figure C
Any pair of sides of a box of any shape may be used for the pinhole and photographic paper.

The pinhole may be located at A or B, in which case the paper could be at D or C, opposite the appropriate opening. Only one pair at a time can be used for taking a picture, however.

So find a lighttight box, cut an opening and a piece of metal larger than the opening to make the pinhole in. Both a soda can of soft aluminum and a heavy aluminum pie plate will work.

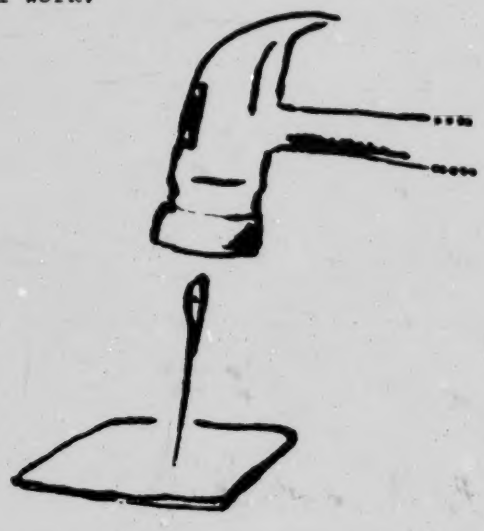


Figure D
The tip of a needle through a piece of a soda can makes a good pinhole.

Then tap a needle with a hammer and make the smallest hole in the metal. A small rough edge will form on the opposite side of the hole. File this completely away with something like emery cloth. Now tape the piece of metal inside the box against the opening with lighttight cloth tape. You have now made the camera body and lens. Finally, make the lens cover by cutting a hinged door from the lid, in front of the pinhole. (See Figure E.)

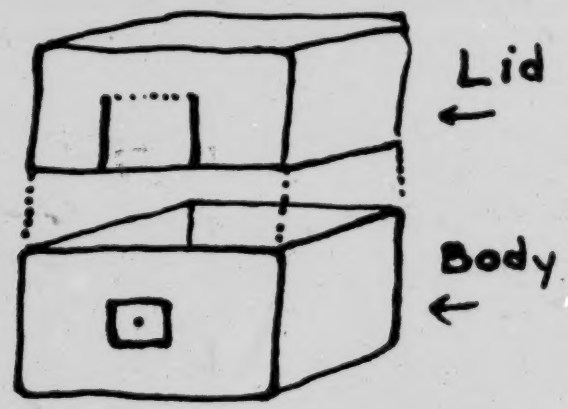


Figure E
A hinged flap on the lid forms a lens cover.

Add a piece of tape to the bottom of the lens cover to keep it tightly closed.

HOW DO I USE IT?

Buy 8" x 10" single weight #2 contrast enlarging paper. In a dark closet with either no light or a red darkroom light, open the package and cut a piece of paper to fit into your camera. It does not have to fit flat against one side, but can curve to wedge between two or three sides. (See Figure F.) Place it with the sensitive side (the shiny one) toward the pinhole. Notice also that the paper naturally curls toward the sensitive side.

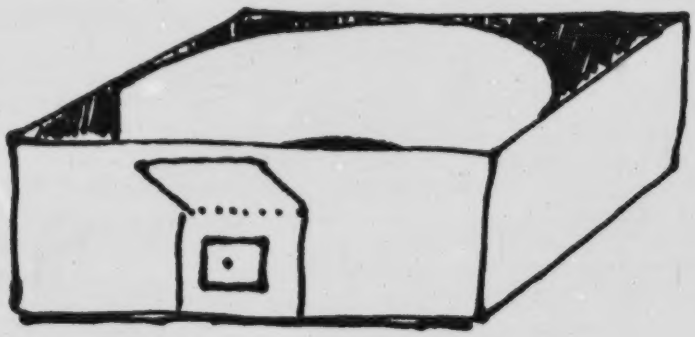


Figure F
Pinhole camera with lid in place (shown with top missing), photographic paper in place, and lens cover raised above the pinhole.

Place the lid on the camera body and close the lens cover. Go outside the building and place the camera on a flat steady surface pointing toward a sunlit scene. The camera will take a picture of almost everything in front of it, so just aim toward what interests you.

Now pull up the lens cover, keeping your hands and body behind the camera as much as possible, and count off 20 seconds. Close the lens cover and return inside.

Two chemicals are needed to develop the paper negative. Buy some liquid paper *developer* and add some to water according to directions for making a working solution. Fill a tray with an inch of developer.

Do the same with some liquid *fixer* in a second tray. In the dark closet (either blacked out or with a red darkroom light) arrange the two trays and open the camera.

Place the paper in developer for about a minute, agitating enough to keep it evenly wet. Remove, hold, drain, and place in fixer for 3 minutes. After the first minute in fixer you can open a door or turn on a light. Then take your print out and wash it in running water for about 5 minutes. If you use a bucket of water, wash for 10 minutes.

Now judge whether your exposure outside was correct. If the picture is too

light it is underexposed and you should increase the time (maybe double it if it is quite light). If it is too dark, reduce the time exposed outside. Make a second print and keep a record of the lighting, time, camera used, and the results.

When the correct paper negative is dry (blotted and pressed flat), take it into the dark closet with a red darkroom light on and cut a fresh piece of paper the same size. Place the two together, sensitive sides together, with the paper negative on top. Hold them flat with a piece of plexiglass or window glass and turn on the room light, or open the door, or otherwise illuminate them for about 10 seconds.

Develop the freshly cut, bottom piece and see if your exposure time needs to be changed. This initial experimenting to find the correct time is unavoidable and in fact is part of the fun of finding out how your own personal camera and lighting work. Later success and ease of use depend on your experimenting to find the right exposure times.

WHAT ELSE CAN I TRY WITH IT?

Additional experimenting may be done by adding holes in the metal foil for multiple images, by using odd-shaped boxes, by changing the diameter of the pinhole, and by placing the paper inside the camera against different sides. Additional *contact printing* may be done with your system, using real film negatives, magazine pictures or drawings in place of your paper negatives.

DAVID W. BOLE

Woodworking

In setting up an area for children's work with construction, the key parts are a workbench, tools, and materials.

The workbench should be lower than a writing desk. A good height for young children is 24". It should be solid, so that the top does not bounce when hammered on. For a temporary work surface, 3/4" plywood can be laid over regular desks.

When you feel it appropriate to do so, hand tools can be introduced. The following items are suggested for beginning hand tools for children, with some guesses at prices. The initial expense of good quality tools is higher, of course, but they last longer and are usually easier for children to use.

Hammers: 10 to 12 oz. size claw hammers (adults use 16 oz. size). About $5.

Saws: Cross cut (used to cut across the wood grain). Saw length from 16" to 20". Saws are designated by points. A 10-point saw (ten teeth to the inch) is a good type. Inexpensive saws dull quickly. The cost of getting one sharpened is relatively expensive. A good saw is about $5 - $7.

For the basic materials needed, start with a supply of odd-cut scraps of wood and glue. Wood scraps can often be gotten free from lumber yards that your school or district buys from. The ideal woods for classroom use are the softwoods, mainly because these are light and easy to cut and hammer on. Good softwoods are white pine, poplar, with the more expensive grades having fewer knots. They are usually sold by the foot. To your stock of wood, add your own bags and boxes; these will always be useful.

Vise: Children, and many adults, need a vise to hold wood when sawing. A vise can make the difference between success and frustration. Since bench vises are relatively expensive, "C" clamps can be good substitutes. They can be used to secure wood over the edge of a workbeench.

Auger or Brace: This is used with drill bits to bore holes. The auger for children should have a sweep of 6 to 8 inches.

Nails: Buy them by the pound. Select a nail that will go 2/3rds of its length into the lower of two pieces of wood. Nails that are too long and thin bend easily; nails that are too thick may split the wood.

STANLEY CHU

Cooking in the Classroom

Why?

Most children enjoy cooking and it is an activity with which all children are familiar. If you choose recipes wisely the results are usually very satisfying to the cooks.

It is an activity in which children of different ages and different abilities can work together well-- all children can be successful at cooking. Cooking is a very good "social" activity.

A good deal of problem solving, discovery, and skills learning and practice is involved in good cooking experiences-- arithmetic calculating, such as costing, estimating, weighing, and fractions-- "Why" questions of science-- changes that happen when ingredients are mixed, heated, etc. -- Writing and reading recipes-- helping one another understand and follow directions-- Organization of cooking and cleaning up.

Cooking is a starting point for many interests and activities involving children in a natural integration of subjects.

How?

Cooking should be an activity that even quite young children can quickly learn to handle by themselves. Introducing a new recipe involves a lot of teacher time-- for this reason, and to build the children's confidence, it is a good idea to carefully structure the activity when first introducing cooking in the classroom; and to choose one recipe and stick to that until all the children can handle it.

If an oven is available, a basic Queen cake recipe is good because a) not too much can go wrong with it, and b) the recipe can be varied in many ways.

Four children cooking together is a good number-- each child following the recipe through from start to finish.

The Cooking Corner

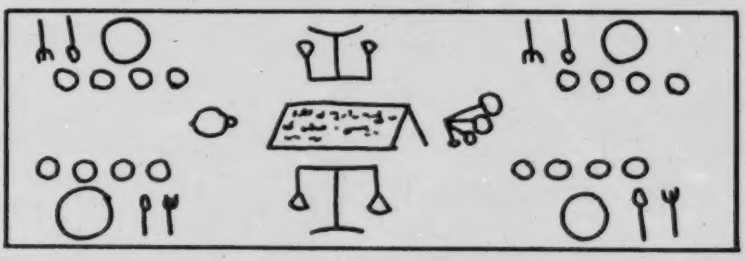
Basic utensils for four children to cook together:

4 mixing bowls
4 wooden spoons
4 forks
small bowls-- disposable cereal bowls can be used
1 pipette-- or "dropper" bottle
1 set measuring spoons
1 measuring jug

2 table knives
balance scales -- 2 if possible
marbles or metal washers (32 to the pound)
a "pinger" timer is very handy, or if class has a clock use cardboard clock face to set at finishing time
table top oven
muffin tins -- to fit in oven
dish washing cloth and dish drying cloth
dish washing liquid
cooking aprons
oven mitts
plastic cloth to cover table
a box to store cooking utensils
a box to store dry ingredients (including dried milk)
boxes from a liquor store are good and strong -- cover them with "contact" -- turned on the side these make good store cupboards

Keeping Cooking Area Uncluttered

Explain safety rules for use of oven.
Put recipe on both sides of stand-up card ∧ and get children to weigh the ingredients and place in separate bowls before starting mixing.



Basic Queen Cake Recipe

For four children:

4 ozs. margarine
4 ozs. sugar
2 eggs
6 ozs. self-rising flour
2 tablespoons milk or water
vanilla, in "dropper" bottle

For young children use marbles or metal washers as weights (5 marbles = 1 oz. approximately).

Recipe for Each Child

5 marbles margarine (1/4 stick)
5 marbles sugar
1/2 egg (1 egg beaten shared between two children)

8 marbles flour
4 drops of vanilla essence
1 teaspoon milk or water

Beat margarine until smooth.
Add the sugar and beat together.
Add egg and mix.
Add flour and mix.
Add milk and mix.
Grease muffin tins with fingers dipped in cooking oil.
Bake at 375° for 15 minutes.

When all children can manage this recipe-- it can be varied by adding other ingredients, e.g.,

coconut
juice and rind of one orange-- instead of milk
juice and rind of one lemon --instead of milk, add a little water
cinnamon
currants
cocoa

The cakes can be coated with icing or butter icing.

Using Cooking As a Starting Point

Cooking can start the children off on various interesting lines of inquiry, for example:

1. If you add a vanilla pod to the packet of sugar when you first introduce cooking to the children, vanilla essence will not be needed next time. This could lead to an interesting investigation of spices and of voyages of exploration in search of spices.

2. Foods of different countries.

3. The history of different cooking utensils and of different methods of preserving food.

4. Many science activities-- mold gardens, bean shoot sprouting-- popcorn popping. An excellent book of extensions from cooking activities into science is SCIENCE EXPERIMENTS YOU CAN EAT by Vicki Cobb (Lippincott). Getting red stripes in a stick of celery is exciting. The teacher needs to do her homework with this book though and also with the TEACHERS' GUIDES OF THE ELEMENTARY SCIENCE STUDY (E.S.S. McGraw Hill).

5. Interesting field trips can be planned.

Don't force cookery related activities on children-- cooking for its own sake is a very good educational experience for children-- it isn't necessary to relate all other subjects to it to the point of making macaroni and seed collages. *They* are fun to make for their own sake and don't have to be part of a cooking experience.

However some "why" questions will come up as children get intrigued at the changes that occur in ingredients as they are mixed -- or heated -- these will be good, natural "starting points."

Recipes

I am not including recipes which are good to use in school because I think the involvement of the teacher in looking for recipes, trying them out, translating them from ounces to "marble weights," and her consequent familiarity with each recipe before introducing it to the children, is a large factor in the success of each new cooking experience for the children.

It would also be a good project for older children.

If doing your homework starts you off on a great new hobby, then an invaluable book for you is one which gives *basic* recipes of the different cooking processes as starting points for creativity. Try: A BASIC RECIPE BOOK FOR EPICURES by Lillian Langseth-Christiansen (Funk and Wagnall).

After that, what about getting involved in Chinese cooking?!

CELIA HOUGHTON

Drawing

MAKING MARKS

Drawing is a kind of communication. Its language is marks. These marks are made by dripping, scratching, rubbing, pulling, and pushing substances that leave traces behind them upon the picture page.

Marks can be made of many substances, and they can be made in many different ways. There is a magic in these marks. When they are placed near each other in certain patterns they show an affinity for each other and create images. When marks create the illusion of space on the page, we can no longer see the page as flat. But not only do drawing marks convey an image of the world around, they tell us something about how the artist was feeling as he worked (the artist being the person who was constructing a page of marks). Marks can express degrees of intensity of vision and feeling even when they do not create a recognizable image. The drawing marks have all been made by someone's hand in response to inner vibrations.

I think it is probably learning to shape letters and write script that starts us thinking that there is only one right way to draw. Later our problems are complicated by a new awareness of space and a desire to use that awareness in our drawings. But first of all drawing is an act of perception, and secondly, an act of communication between one person and another.

Before going on to explore problems of representing actual objects, I have chosen to outline a number of exercises that may help to increase your vocabulary of drawing marks, and give you a chance to experience the magical effect these marks have upon the paper.

DOTS

A dot alone on a page is a dead spot. It is small enough to be ignored. It exerts no push or pull, either on us or against the edges of the page. It gives no impression of movement.

What happens when you have more than one dot, or when a dot becomes a spot or blot?

Does a change occur in our feelings?

When do we begin to "read" an alignment of dots?

Once we start to read it can we stop again?

What do we "see" in our groups of dots? Can dots make meaningful configurations?

Are all the spots equally up front on the picture surface? How can you change

them to make some of them more up front, and others farther back?

Can a big blot sit anywhere on the page with equal comfort? When do we feel uneasy with its location?

POSSIBLE EXERCISES

For pens (dots) and brush (spots):

Play with the dots, laying them down at random, until an image emerges. Work loosely, not forcing an image.

Pattern your dots so they form straight, curved or geometric patterns. Feel the magnetism that turns a row of dots into a line.

Make several patterns of dots around the page -- patterns of different intensities. In some cases let the dots hang very loosely together. In other places let them concentrate until they become almost black. Try to balance the size of some groupings against the intensity of others.

Try to make a group of spots of different intensities, making your first shape with pure india ink (use small amount), then adding water little by little, each time putting a sample blot on your testing page.

Drip some spots of india ink onto one of the plastic sheets. Let the spots be different sizes. Take a piece of paper and put it down on your sheet of drips. Rub it gently. See what you have printed.

LINES

A line could be said to be a moving dot. In this sense it is an expression of time. A line starts somewhere and finishes somewhere else. It has direction and energy. It leads our eyes all around the page in many directions. It can transform a piece of paper from a flat surface into one with depth. Lines move quickly and slowly, they start and stop. And they can be nervous, gentle, wobbly, vicious, sneaky, frightened, calm, sincere, sensitive, bold, cautious, robust, flimsy, cheerful, gay, and just about anything else that a person can feel or be. Lines can be expressive of what is going on inside a person; they are a way of making the inner person "visible." In drawing there are no right and wrong kinds of lines.

Lines make a picture space visible, just as light and surfaces make life space visible. Space can be split, fragmented, overlapped. Drawing is a two-dimensional representation of these experiences.

Can we assign these emotional qualities to the lines we see?

What kinds of lines move you inside the surface of the page?

How can you structure you lines so that one seems to fall behind another?

What feeling does a scratchy line convey?

What is the mood of feathery lines?

How does a heavy, bold line separate the space within the area it describes from the space outside that area?

Does a delicate line do the same thing?

What sort of "magnetism" is there between one line and another?

Do lines and dots pull on each other?

Is there any relationship between the lines you make on the picture surface and the four edges of your page? What happens when you work on a circular page?

Balance is usually a comparison of one thing with another. What gives us our sense of balance in a drawing?

What happens when you change the intensity of some of the lines you are working with, making some of them a stronger black and others a weaker gray?

What happens when you have several lines moving in the same direction close to each other?

POSSIBLE EXERCISES

For pen and brush, and perhaps fingers:

Working with a pen and india ink draw some lines that flow gently across the picture surface. They can be gently wavy. Then try some lines that slash fiercely into the page. Experiment to see what other moods you can convey.

Taking any brush (a clean one) spread some water on various parts of the paper. Then draw with a pen and ink in and out of the wet spots. Try it on another page working with a brush. What kinds of moods are expressed by these lines?

Draw several short parallel lines. Then draw several more blocking the path of the first lines and traveling in a different direction. Keep on working until you feel the lines creating a weave of picture space.

Make as many different kinds of textures of lines as you can using pen, pencil, wet brush, dry brush, sticks, twigs, Q-tips, etc. Try to feel out which of these seem to loom forward into the picture and which seem to sink back. Is there any difference in their location in space?

Using a round brush, make lines that change from very thin to very thick as they travel along. Sometimes they will be skinny, sometimes thick black pools. Is there a difference in "speed" between the thick and thin places?

Using a round brush start drawing, but change direction as soon as you are aware of where you are going, keep changing direction everytime conscious thought takes over. Do any images emerge from this tangle of twisting lines?

With a brush make wobbly lines of disconnected marks across the page. Keep on

working until you feel involved.

Experiment with lines and dots seeing how close they have to come to each other to exert a pull. The simplest test of this is to draw lines that create a face because of their location, and their ability to hold together.

Using a small square of paper and holding a long brush all the way back along its length, write some huge script letters; do not try and stay on the small square; draw right over and off its edges. Lift the small square up and notice what kind of lines you made and what kind of pattern they form.

Drip some india ink on a plastic sheet. This time lift the sheet so that the ink runs. Turn the sheet if you choose, until you feel the ink has run enough. Put it down, lay a peice of newsprint over it and see what you have printed.

Hum a tune to yourself. Make some lines that somehow correspond to the pattern of the tune.

Close your eyes and using a pencil, preferably one of the soft drawing pencils, try to retrace with the pencil every step that you took since you woke up this morning and came to this workshop this afternoon.

If you draw a heavy line on the page, what other lines do you need to give the first line a comfortable feeling of balance?

Freely draw a number of lines with differing thicknesses on a piece of tracing paper. Then rip up the tracing paper any which way into pieces. Glue these pieces down onto a sheet of cardboard, using some india ink to heighten the lines in some places. This may give the impression of overlapping areas of space.

Using finger paint, play with the speed and direction of line. Use a plastic sheet, some paint, and when you have a satisfactory experiment, put some paper down on it and make a print.

Draw a few heavy lines on a page. Then trace with dots the areas that seem to relate, or pull against each other.

Spread waterbase printer's ink with a roller all over a plastic sheet. Draw into the ink with different things, both ends of a brush, a bit of rag, a piece of cardboard. When you have drawn many kinds of lines, lay a paper down, rub it and pull up a print.

Take a small piece of linoleum. Make a cut in it with one of the tools. Spread ink on a piece of plastic with the roller. When it is spread smoothly, ink up your linoleum block. Make a print of it by putting a piece of paper down on top of it and rubbing with your elbow. Wash your block and make a few more cuts, trying to balance out your lines. After each few lines make another print. Keep on until the block is completely cut away.

PLANES

On the picture page a plane is a line that has shifted in space. Intersecting

lines can form planes of different shapes and sizes. The four edges of the picture page form a square or rectangular plane, but a plane could be a flat or curved (flat) surface of any shape. (In this discussion for the sake of simplicity we are talking of "curved" planes; in actuality a curved plane would be made up of an infinity of flat intersecting planes.) Thus, if we ripped the edges off a sheet of paper it would still be a flat plane but it would have a ragged shape.

"Within" the picture, lines and blocks of color make planes of different sizes and shapes, with the appearance of different surface textures. These planes seem to sit at different locations within the picture. Some planes are formed by a purposeful placement of lines, perhaps in geometric patterns. In still other instances the plane may be a very strong shape (perhaps even black) and the lines that border its edges feel weak by comparison.

Planes have dimension and are bordered by lines, where they often end.

How can you recognize a plane in a drawing?

What kinds of planes can you make with intersecting zigzagging lines?

How can you draw a plane that lies back in a drawing?

How many shapes of planes can there be?

In what ways can lines be used to construct planes?

What shape planes draw the eye back from the front plane to the back?

How many different types of surface can you make on the planes of your picture?

At how many different locations in the space of the page?

What are the qualities that differentiate one texture from another?

SOME EXERCISES

Take some of the gummed tape and cut out shapes of different sizes. Arrange them on a colored paper, trying to create as much of an illusion of space as possible. Try experimenting with parallelograms and ovals of differeing sizes. Also with the effects of overlapping.

With pen or brush draw some intersecting zigzags. Color the planes created by these lines with very dilute india ink.

Place a piece of paper over different surfaces in the room and cut out shapes with different textures. Arrange them as a collage. Do any of them sink back into the page, do any of them create depth? Do any of them seem to leap forward?

Can you arrange a series of surfaces (textures), either rubbed or created, so that they have directional pull and create angles and space?

REPRESENTATION

With lines and dots, planes and tones, we can create many moods, and explore the magic surface of the paper. With these elements we can create and enjoy designs having all of the basic aesthetic qualities: balance, repetition, rhythm, and pattern. These qualities can be there with a forceful vitality, and yet it still remains probably everyone's dream to be able to make pictures of some of the things he sees. We can certainly feel the strength of images. They can frighten or console us, warm or chill us, delight us or move us profoundly. The most simple diagram of a human face has enormous power and we would probably hesitate, at least for an instant, before we could poke out its eyes.

But it is a complicated problem to learn how to create an image of what we see, either our inner images -- the things we see in the ink blot, in the stain on the wall, clouds, clods of dirt, falling leaves and apple cores -- or the external visual world.

In some sense our inner images are easier to get at. A simple stain on a page or a scraggly group of lines can be suggestive, and with a few additions can turn into a strange bird, an animal, a face, a monster, a traveling cloud, or simply an important shape. Some of these inner images have probably already appeared in some of the experimental drawings.

The external visual world is harder to know what to do with. We must consider what we see and know the tricks of the two-dimensional page.

SOME EXERCISES

Working on diagrams: Try to consult your experience and discover in your memory as many different parts of an object as you can (ex.: table top, pedestal, legs, feet, toes or tree: trunk, bark, roots, branches, twigs, leaves, buds, berries). Try to relate the shapes that you remember to geometric forms. This is a hard transition, because your memory is 3-D and your paper is not. Use the geometric form on your paper.

Perspective diagrams: Contrast what you know about the shape of a table top with what you actually see when looking from an angle. Although the top *is* square (or rectangular) does it *look* that way?

Think of a cup. Think of it from up above. Draw it as a geometric pattern, taking the simplest outline. What does the handle look like from up above? How far does it stick out? What if there is a little coffee in the bottom? How would you represent that? (I get something that looks like a fried egg.) Then think of the cup from the sides. Are the top and bottom edges parallel? Do the side walls join these edges straight or at an angle? How far does the handle stick out? How big is the loop?

This is very specific thinking about a particular object from a particular point of view -- done without looking at a real cup.

A questure drawing explores the kind of energy expressed by an object, living things particularly. A questure drawing is a kind of scribbling that expresses

your inner response to the vitality of the thing you are seeing, feeling and sensing. Take a pencil and let it move about rapidly, probing each area of space a person seems to occupy. Do not look down at your paper, just move your pencil all over as though it were following the inner thrust of the pose. Take turns at posing and only take about a minute for each seeking scribble.

If you want to draw a cup, not as a pattern of geometric shapes, but as a real object in real space, it must be studied for the change of light on its surface, as well as for its shape from the angle of observation. Notice where the cup catches the light, where the walls are in shadow. Make a simple diagram of the cup and then try to apply dilute shades of india ink to the drawing. In this case you will notice that dark areas do not come forward as was true with our work with line. Put the india ink on the drawing in a way that corresponds to the amount of light you see in that place.

There are many ways of experiencing the fact that things seem to diminish in size with distance. One of the most vivid ways is to look into a mirror, and make marks on its surface that correspond to the top and bottom of your face. Compare the distance between the marks on the glass and the size of your real face.

Hold a pencil up to your eye and compare it with the size of something or someone at a distance. Then take your pencil over to the object and see how the sizes really compare.

The representation of something can be based on what you know, on what you feel, or on what you see -- or on a combination of all of these things. Feelings sometimes cause you to enlarge a shape to give it greater significance. Knowledge sometimes may insist that you draw something as a diagram to make it very clear. Vision may insist on special angles, shapes and effects of light.

Holding a sheet of plastic up in front of you, make marks on it with an inky finger that correspond with someone's face or to something in the room. Take a print of your drawing if you like. Compare the size of your drawing to the real thing.

A contour can be experienced by running your finger, or your eyes, over a surface, or watching a fly walk along it, etc. The edge of an object where the surface turns away out of sight is only one possible contour, although it is this edge that we use when we outline something. On a person there are many contours that are not outlines. This exercise is designed to help you connect your sense of touch with your sense of vision. As you run your finger down someone's face (or your own) draw a line expressing the change in surfaces that you feel.

Taking a pile of fabric, lay it in a crumpled heap. Draw lines that "walk" over the fabric the way an insect would -- going in and out of all the folds, from one side to another. Crumple a piece of paper and do another drawing. Is your line similar?

Create a horizon line on your page and place objects in different spots in the "sky" space and the "ground" space. Can you get objects to sit on the ground or do they all fly?

Try to create a jungle of trees using lines of varied weight and tone. Start with the lightest shade.

Try the same thing using splotches of differing intensities to represent fruit.

Some objects could be said to have a skeletal structure and some a mass structure. A climbing vine, a piece of wire, a standing lamp, all can be simply diagramed with line. What objects would you say have mass and how can you convey a feeling of it?

Ink up a plate and draw a design of an animal or insect -- not as a visual experience, but from your knowledge of the salient features of the thing. Use your fingers, etc.

CRAYONS

Crayons are essentially used with paper, but they may also involve fabric or even papier mache.

Crayons come in several kinds, the most common being Crayolas, Cray-Pas, and colored pencils. Both the ends and sides of crayons and Cray-Pas make marks of different thicknesses. Colored pencils have to be sharpened, of course. I like to sharpen the other kinds too; otherwise it is hard to make the kind of marks I like in precisely the places where I want them. When a blunt crayon is used from the side instead of the tip, it can ruin a design. Sharpen with a kitchen knife.

Crayons can be used melted. A muffin tin works well for this: break up the old unwanted crayons and a few bits of paraffin into the various compartments, and direct the heat of a light bulb down on them. A clamp-type reflector light, such as is found in hardware stores, is cheap and works well. (A homemade substitute: a tin-foil pie plate bent around a bulb.) It takes a while to get them melted this way but it eliminates the need for a hot plate, doesn't tip or spill or require heating over water. The disadvantage is that the compartments cool off quickly. A heating pad underneath might be helpful.

As a colored drawing material that comes in stick form, chalk fits into the crayon category. Chalk is a marvelous medium because of the intense colors, but smearing is a problem. To "fix" the colors you may (1) dip the paper into buttermilk or sugar water or liquid starch or (2) dip the chalk into the starch-and-water and draw on the starch-coated paper. Other effects and pastel colors occur when you sprinkle just a spoonful of powdered white tempera paint on the "dipped" paper. These different dips fix the chalk. Hair spray will do it too. Work on black as well as white paper.

Paper has color, shape, size, and sometimes texture. Crayon designs can be made on newspaper, graph paper, brown paper bags, manila, newsprint, regular white drawing paper, finger paint paper, shelf paper (in long scrolls), and cardboard, etc. Often I think of paper as square or rectangular -- but it doesn't need to be. Paper can be made round, oval, and so on. A change in the shape of the paper changes the design problems and presents a new challenge. It is great fun to draw a series of scenes on a long scroll of white shelving paper, taping down for the time being the section on which you are drawing, and only opening

it up to full length when you are finished. Brown paper bags from the supermarket can be used as is, or they can be soaked and spread open, or even crumpled (wet) and then spread. Wrinkled, they present a textured surface to work on.

If you don't have a supply of graph paper you can make some by ruling off 1 inch or 1/2 inch squares on a stencil, and then mimeographing it. Graph paper is fine to work designs on, using the grid to help regulate the size of the different colors, their balance and distance. The squares of the grid need not contain colors only; they could also hold numbers or letters or flowers or fruits; circles, squares, triangles or cones could be drawn into them, as could many different kinds of texture. Four, or any number of squares could be used together, as smooth areas, as rough-looking areas, as striped or spotted areas. There are innumerable combinations. Brown paper bags that have dried to look like wrinkled leather, can be folded to mark off regular areas, and designs can be made on them.

The popular scribble design, in which a kid makes a big scribble and then fills in different areas with different colors, has more possibilities than are generally taken advantage of. Areas do not have to be all filled with bold smooth colors. Some could be lightly colored and others heavily, some could be speckled and others striped or textured. Strong colors can balance weak, dull ones. If every area is filled in with equal intensity the design becomes dull.

Crayons that have been melted can be brushed onto paper (or cloth) using the cut end of a paper tubing, an old spool, a bent pipe cleaner, or any number of objects. They can be dipped into the melted wax and then pressed against the paper. Oaktag is a good paper for this if you want to scrape the wax off later, because oaktag is strong and the surface doesn't tear away when the paper is rubbed. Wax on cloth can be ironed off between sheets of newspaper with plain paper up against the cloth so it doesn't get newsprint on it.

Wax can be applied to the cloth and paper with a brush also. After the paper has been waxed once, and a light color dye or paint applied (then dried), it can be waxed again and a darker coating of paint or dye coated over the new markings. When all is dry the wax can be scraped off and the two different colors of paint, and the background paper color will show. When fabric is waxed and dyed in this way it is called *batiking*.

We are surrounded by many beautiful textures that are often ignored. If you put a piece of paper over something with texture and rub the surface with the side of a crayon, the texture will show up on the paper. This texture can be kept as is, combined with a picture, or perhaps cut out and used in a collage. Sensitivity to texture can add variety to any picture or design.

Children can bring in small objects to be glued down on small cards, for example, rice or beans, onion skins, orange pips, coarse salt. A small baggie with a little in it is enough for a sample card. Vegetable bags, doilies, burlap, and so on, all have textures suitable for rubbings. The sample cards of textures can be looked at, felt, smelled -- a few could possibly yield rubbings -- but they will add to the awareness that a multitude of things have texture, everything in fact, and that the contrast of textures and forms and colors makes the world interesting to look at.

Children draw naturally. They have their own way of representing everything in their experience -- and a good many other things besides, things that they can just imagine. There are ways to talk about their work, and expand their ability to create beautiful pictures, without influencing them in a negative way.

It is always better to find something genuine and positive to say than something critical or negative. When you look at a picture there are many different aspects that can be mentioned. Some pictures are drawn to tell a story or to illustrate one. If this is so one can mention with interest the numbers of things that the child has put into the picture -- the situation, or the details, the action, and so on. But many pictures may seem to tell a story, yet really have a different focus. Pictures often express things that cannot be said in words. They do not have to be something that can be explained. They communicate through art elements, not verbal elements. These art elements are color, form, rhythm, contrasts, balance. Children have great sensitivity to these elements as they construct their pictures. I think these are things that a teacher can talk about in a natural way, and sometimes put in words a personal reaction that is constructive.

Contrast is a key element in experience. Something may seem big because it is seen next to something else that is very small. It in turn may seem small next to something very bright; something may be rough and dark looking next to something smooth and shiny. To make an interesting picture, contrast is important. If all the colors are equally bright, all the shapes equally large, and all the textures much the same, a picture may not be terribly interesting to look at. I think a teacher could say something to this effect.

Balance is something that is felt out. It is something that can be achieved in different sections of a picture without those sections being identical. For instance, a house on one side may be balanced by a tree on the other side, and a child may stand in the middle. If all these things were crowded together and the rest of the page left blank, the teacher looking at the picture might feel extremely uncomfortable. She could speak of this discomfort, the feeling that all the weight is on one end of the seesaw. (This is not an argument for even spacing. The crowd may be balanced by other picture elements.)

Sometimes tiny figures are placed at the bottom of a picture, and much empty space that doesn't really qualify as sky is left at the top. A teacher could mention that she is most interested in all that empty space, and that she would like to get a closer look at the scene, rather than at so much sky. The picture might be looked at from across the room, and the question posed, "How would you make this picture visible to me if I were looking at it from here?"

Rhythm comes from a repetition of spots, points, dots and so on, that can catch the eye and move it regularly or irregularly around the page. There are many different rhythms. The sense of rhythm comes from the complexity of these spots and lines, and how the eye moves from one to another. I would say that the more involved a drawing is the more intense the rhytym. Children can make marks that represent marching rhythms, walking rhythms, swinging rhythms. Just as we live with our heartbeats, rhythm is part of us.

Children can experiment with the basic forms, both through repetition in rhythmic patterns, and in their "representational" drawings. They could on occasion

draw a picture using entirely round forms, or square forms, or triangular forms. They could write with round letters and numbers, square letters and numbers, and so on. These experiments should always be presented as something that is fun, and not as a better substitute for their own usual work. These exercises could be done on graph paper or on cloth, and they may extend a child's vocabulary of forms or they may not, depending on the individual.

Ocasionally, too, a picture could be done, say, in all green crayon, varying its use in as many ways as possible -- light, dark, thick, thin, patterned, plain. The children will appreciate each other's solutions.

Small papier mache objects, animals, people, can be made by wrapping newspaper dipped in library paste around a form made of pipe cleaners. When these things are dry they can be painted with melted crayon.

Puppets can be made from paper bags of all sizes, using them folded in the way they come in the stack, and putting the mouth on the part of the bottom that is folded down. Crayon works well on paper bags.

DRAWING WORKSHOP MATERIALS

soft black drawing pencils

gum erasers

pen holders, pen points

round tipped brushes

flat tipped brushes

sticks, twigs, bits of weeds, Q-tips

india ink

flat sheet of plastic
(the backs of tin trays or a piece of glass will serve; glass is a little more dangerous)

rollers

waterbase printing ink

white drawing paper

newsprint

scissors, glue, and crayons

finger paints (2 cups flour, 5 cups cold water, salt for thickness; cook and beat until smooth; add Baker's dyes -- regular food coloring is a little weak)

jars -- for india ink, washing brushes, and pen points

sponges -- to clean up with and to draw with

water supply -- buckets or sink for washing plastic sheet

battleship linoleum (scraps from lineolum store; smooth surface makes a better print)

linoleum cutters (shallow gouges, best with points that can be sharpened)

gummed tape (wide, not masking tape, the kind that has to be licked to be applied)

colored paper and tracing paper

ILKA LIST

Kitemaking

The spring (or fall) air seems to urge you to fly a kite; so why not make your own? Children, from seven to seventy, enjoy making and flying kites of their own creation. Here are some beginning points on working with kites -- points that are easily extended into language, science, social studies, and other experiences.

Based on the common experience of building kites, questions naturally arise, such as: Why do (or don't) kites fly? How high do they fly? Where did kite-making come from? Children, with some adult support, may answer these and other questions, all in the process of kiting.

History

Records of the earliest kites were found in Malayan religious observances 3,000 years ago, among legends in Egyptian hieroglyphics 2,500 years ago, and in military expeditions of the Han Dynasty, China, about the time of Christ. Kites are found in most ancient Japanese folklore, originally as objects of mystery, but later as a source of pleasure for the young and old. In modern Japan, kiting remains a national sport.

When kiting reached Europe, it apparently lost some of its mystery as it became a means for experimentation. About 1825, in Bristol, England, George Pocock found that several kites, hooked in tandem, could pull a carriage and its passengers. Ben Franklin's dangerous experiment is well known to most Americans. Dr. Alexander Graham Bell invented the tetrahedon kite, which, when combined into a number of triangular units, carried a man nearly 200 feet into the air.

Two kites that are relatively easy to construct and fly are described in detail below. A basic list of supplies for most types of kites is described first:

Materials

Sticks: 1/4" or 1/8" dowel rods, strips of 1/4" bamboo from bamboo shades, or 1/4" x 1/4" strips of common pine

Covering: Paper: gift wrapping paper or rice paper
Plastic: large garbage bags, about 3' x 3', or Mylar, good but expensive
Cloth: a worn sheet or light weight synthetic material

String: For stringing and binding: carpet or other heavy thread
For flying: common kite string or fish line

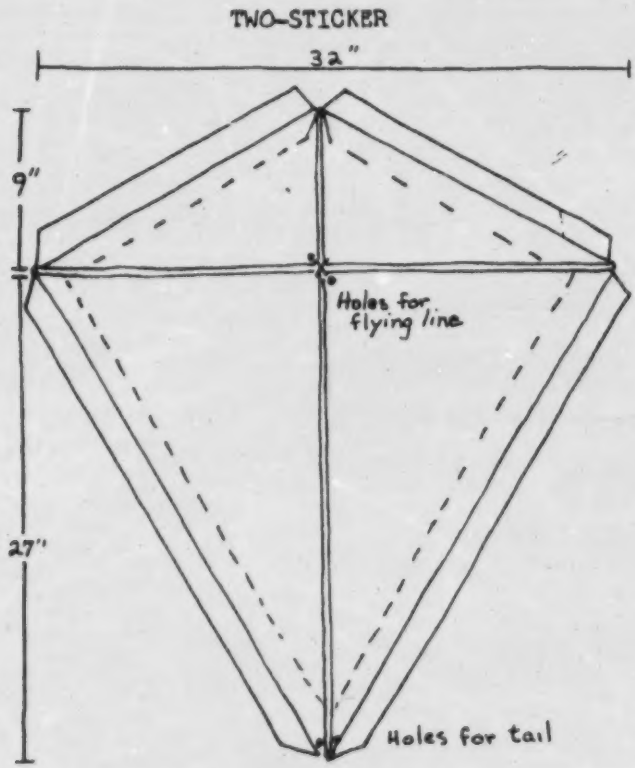
Fishing line swivel (optinal): Tied to the end of the flying line, this device prevents binding and raveling of the string. Available in sporting goods stores.

Glue: Rubber cement on paper to paper; white glue for wood to wood, cellophane tape for paper to wood; and masking tape for plastic to plastic

Tools: Pen knife and scissors

The Classic Two-Sticker Kite

The two-sticker, a conventional flat kite, is cross shaped, and flies at a low angle in the sky. Flat kites may be designed for almost any shape, size, or material. All such kites require a tail, which adds just enough resistance to stabilize their flight.



Directions

1. Framing: Select two sticks, 32" and 36", or 24" and 27" in length. Using about 12" of thread, bind the spar or shorter stick across the mast at right angles, a fourth of the way down from the top. The binding thread should cross the joint in an "X" pattern. Apply a thin coat of white glue to the joint before and after binding. A clothes pin or rubber band may help to hold the joint in place while drying.

2. Stringing the frame: Notch the stick ends and string the thread through the notches. Stretch the thread, but not enough to bend the sticks, and tie it off.

3. Covering: Place the cross frame on the paper or plastic cover, perhaps taping the cover to the floor or table top to secure it. Draw a cutting line more than an inch wider than the frame. Trim the corners of the covering so material will fit around the sticks. Fold material margins over the frame, glueing or taping in place. Decorate the face of the kite.

4. Bridle: The simplest to construct is a "one-legged" bridle, just a string looped through the cross point and out the face of the kite. See the Brummitt reference (Resource Section under Kites: A Selected Bibliography) for more complex designs. Punch out and reinforce two holes for the bridle, diagonally over the crosspoint. Tie a loop or plastic curtain ring to the *face* of the kite -- the side opposite the exposed sticks.

5. Tail: Punch out and reinforce two holes at the base of the mast for the tail string. Attach one end of 10 to 12 feet of string through the holes. Every foot or so tie the string to paper or cloth bows (not the bows tied to the string, they might slip).

6. Flying line: Tie a fishing line swivel to the end of a large ball of kite string. When ready to launch the kite, fasten the swivel to the bridle loop so the face of the kite is towards you.

7. Lauching in a light wind: Set or have a partner hold the kite upright and unwind about 75 feet of string, upwind from the kite. With the kite facing the wind, wait for a gust, yell, and your partner is to shove the kite up while you pull in on the line at the same time. If the kite catches the breeze, only let out a little line at a time, then pull in a little, gradually letting the kite climb higher.

   Stronger wind: With your back to the wind, throw the kite into the air, playing out a little line each time the wind pulls steadily on the kite.

8. Landing: Light wind: Wind up the string and pull straight in.

   Strong wind: Guide the kite down as you wind in the string in more of a zig-zag pattern. The safest method in any breeze is to let your partner reel in the string while you, with a gloved hand, gradually walk "up" the line, with the string running under your hand.

Scott Sled Kite

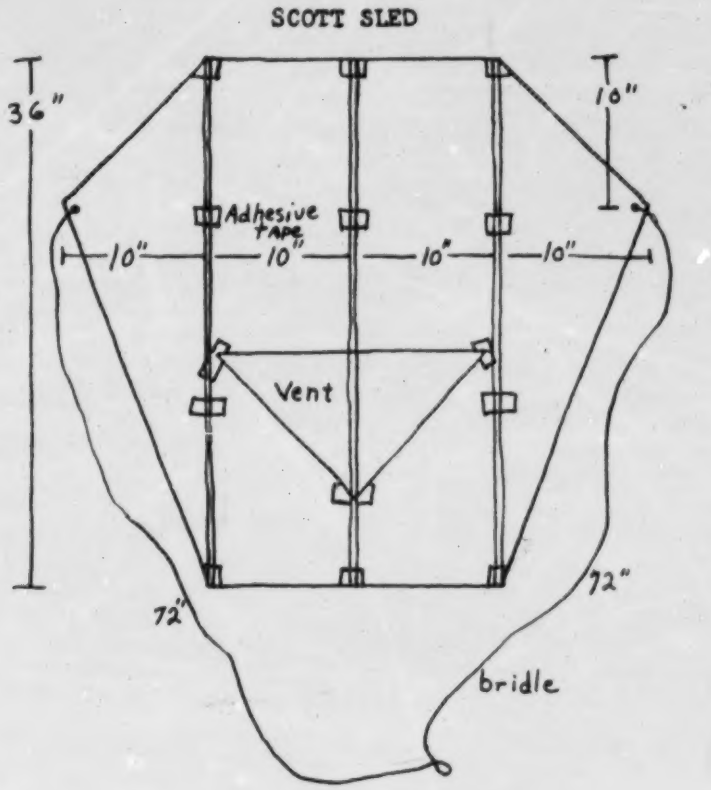
The Scott Sled Kite, designed by the son of Sir Walter Scott, is almost easier to build and fly than the two sticker. The sled has no cross frame, no stringing around the frame, and no tail. It is easily rolled up and carried on a crowded bus. The dimensions are not so flexible, however. One inexpensive variation of the sled kite that will fly is cut out of a grocery bag. The design for that variation is in the March, 1974 issue of *Sunset* magazine (on file at the Workshop Center also).

Materials

Sticks: Three 1/4" dowels, 3 feet long, or bamboo strips

Covering: One piece of paper, plastic, or cloth 36" x 40". A plastic garbage bag, cut open along one side and across the bottom, works quite well. Variation or design may be added by fastening strips of different colored material together.

Adhesive or masking tape
String
Scissors and paper punch



Directions

1. Covering: Tape the cover down to the floor. Tape the two outside dowels in position first to use as a guide for marking the rest of the pattern. Mark the outline over the entire covering, including a vent hole and an overlap of the triangles that become the wings or runners in flight. Cut out the outline reinforcing with adhesive tape corners or edges that have no overlap. Tape down the available overlap. Tape the center dowel into position.

2. Bridle: In the apex of the wings or runners, lay down several layers of adhesive reinforcement for the bridle holes. Punch out the holes as illustrated. Attach one end of a 12 foot string to each bridle hole. Tie a loop in the middle of the string so there is 6 feet of bridle leading to each hole.

3. Attach the flying line to the loop when you are ready to launch.

4. Launching: (See instructions for the two-sticker.) The sled kite will fly in a variety of circumstances, but goes up easier in light steady winds. It flies at an angle of 60 degrees or greater.

LOREN D. WEYBRIGHT

Printing

For me, and for a lot of children that I know, printing has always been a delight. Even when you feel almost certain that you know how the result will look, there is pleasure in peeling the paper away from the block and seeing patterns emerging in bright contrast to the colored ink background.

Printing is basically the transfer of a pattern or texture from one surface to another. When fingerpaint is spread on the back of a smooth tray, or on the flat surface of a formica table, or perhaps across a sheet of glass, you have a surface ready to receive a pattern. You can make a pattern in the painting with your hands, your arms, your fingernails, the stiff hairs of a brush, or the pointed teeth of a comb. If you are careful not to spread the fingerpaint too thick, or too wet, you will be able to make many kinds of distinct markings in the paint. These marks might correspond to things you have seen or felt in nature, or in the immediate surroundings of objects, or in the movements of your body. In any case, when you are finally satisfied, whoever has clean hands places a piece of paper down across your fingerpainting and rubs it gently. When you pick it up you have a *monoprint*, that is, one impression of your design.

Monoprints can be made using one color on one part of the tray and one color on another. They work especially well when scratched or drawn into oil paint (from the artist's tubes) that has been rolled out thin over a sheet of glass. But oil paints are not suitable for young children as they are hard to clean up, tend to spread out all over your nose and arms, and have to be washed away with turpentine.

Another kind of monoprint can be made on a sheet of glass or plastic, using regular, thick, school tempera paint to which liquid soap or detergent has been added. You will know if you have enough detergent in the paint by how well the paint sticks to the glass. (It should be thick enough to keep from rolling off.) The liquid soap allows the paint to be brushed onto the surface of the glass in different bright colored areas. When paper (manila, newsprint, fingerpaint, or others) has been laid over this painting and *gently* rubbed, you will have a print of your design. The size of your print is limited only by the size of glass or stiff plastic sheet that you have to paint it on. Sometimes it helps to work out a picture in chalk on a large piece of paper and put it under the the glass. Then when you paint you can lay the paint in the general areas that you have already marked in the chalk sketch.

The soft, pressed plastic meat trays that are available in most supermarkets and that dent easily (with ball point pens or any other sharp object) can also be used in printmaking. After you draw on the surface or press objects against the surface to make impressions, you ink it up with a roller, then lay a piece of paper down on it and rub.

Ink may be rolled out on a formica table top, if you don't have a tray, a sheet of heavy plastic, or a piece of glass that has been made safe around the edges with masking tape. To control the spread of ink it is helpful to have a roll-out area

of a definite size, and it's easier to clean up. The best kind of rollers seem to be of soft rubber, about 4-6 inches wide. The hard rubber rollers don't cover the surface as well, and when you get into inking up cardboard, string, weeds, and cloth, they don't get the ink into all the places that need it. Printing ink for school is usually waterbase ink, which means it can be washed away and cleaned up in the simplest possible fashion.

Paper can be cut and glued and used to construct printing blocks. Oaktag glued onto oaktag is good for this, as are pieces of gummed paper tape stuck to oaktag. Oaktag is the recommended material because its surface is not as porous as the surface of manila or construction paper, and it doesn't wear out so quickly in the inking up. But when gluing down pieces to make a "paper printing block" be sure they are well-glued; otherwise, the combination of the ink and the roller will pick them up. Other materials that can be somewhat flattened or pressed down can be glued onto a small piece of board of cardboard. It is often a good idea to coat these lightly with a brushing of Elmer's Glue so that they absorb a little less of the printing ink. These blocks can often be inked with a roller, but if it doesn't seem to be working, try a brush.

Linoleum -- a lino -- is especially good for older children, for it is safe for them to handle the cutting tools. I find that children are perhaps more careful than adults, once they have been instructed to always head the point of the cutting blade away from themselves. But younger children could work lino, using tools that are not quite so demanding in terms of control. Lino can be scratched and dug at, and poked and marked with nails, screws, and so forth. Still the nicest patterns are etched on the surface of the lino with gouges. It is best to keep these gouges sharp; they will then be less likely to slip and, also, it won't take as much force to direct them across the material.

In the reduction method of working with lino, only a few marks are made on the material at first working. This is then inked up several times in a light color, such as yellow, and 6 to 10 prints are made at this stage. The block is then washed and dried, and additional marks are made. The block is inked in a darker color, and the prints are made on top of the yellow stage prints. This process is repeated once or twice more, each time overprinting in a darker color. The result is a number of prints, each showing many colors.

Wood is worked in much the same way as lino. The tools must be very sharp since wood has grain that can be hard to cut across. Small pine board scraps are very good for woodcuts.

Melted wax (heated in some type of double boiler, always over water) can be printed onto fabric or onto paper. As new areas of wax are applied, the fabric or paper is treated to dye (or paint) baths of increasingly darker colors. Many different kinds of objects can be dipped in the wax and applied to the cloth. The ends of paper tubes, old spools, pipe cleaner shapes, cookie cutters, bottle caps, rolls of paper, and so on are good to try to print designs with.

ILKA LIST

Batik

DIRECTIONS

1. Wash fabric, dry, and iron free of wrinkles. The fabric will thus absorb more dye more evenly.

2. Melt wax. Wax is inflammable, so melt in a double boiler set up. 190 degrees is a good temperature at which the wax will flow. If the wax starts to smoke, it's too hot.

3. Paint on your design with hot wax and a paintbrush. Make sure the wax is hot enough to completely penetrate the cloth. The waxed cloth area would look dark.

4. Allow the wax to cool for about a minute.

5. Rinse cloth in clear water, then place in dye bath. Lukewarm or cool dye baths must be used. Otherwise, hot dyes would melt your waxed areas.

6. Remove from dye bath and rinse out excess dye with clear water.

7. Hang up to dry.

8. Remove the wax. An easy way to do this is by ironing cloth between sheets of newsprint. Keep changing the newsprint until all the wax is out of the cloth.

   Other areas can then be waxed, or rewaxed, and put again into a different color dye bath.

   Try dyeing with the lighter colors first. They will become less contaminated.

Sheets of wax paper placed under your cloth as you paint on the melted wax will prevent the cloth from sticking to the working surface below.

STANLEY CHU

Communication

The Open Corridor community of several heterogenously grouped classrooms of different grade levels is a natural setting for children to help each other. With whole-class teaching ended, and difference in interest as well as pace provided for and supported, one group of children has something to share with and tell another group. With children working together, perhaps without the teacher, on various aspects of a common theme, the interaction and various viewpoints expand the possibilities and understandings. With the teacher expanding and adapting from whatever is the child's starting point, the effort to communicate and to interact with this mind and with that mind and to "step into" the viewpoint of the other is prized. Communication with one group or one teacher is not enough -- there are always others who are interested and would like to know and so explication and consolidation are or can be natural concomitants of the organizational frame in a community of many adults and many children of diverse interests and diverse starting points.

The community presupposes that interaction of the various participants -- children and teachers and parents and administration -- sharing experience is a positive good, supporting with interchange of viewpoints and the introduction of new possibilities the reframing process that is integral to new learning, supporting the continuity of the development of teacher and child. The respect for the potentiality of each participant and for his contribution in interchange is inherent in this structure.

It is these possibilities that have been observed of language development by the linguists who have worked with our advisory group as positive aspects of the Open Corridor organization supportive of language development. One of the linguists, discussing with our group of advisors the child's need to have his thoughts and language understood and affirmed pointed also to the somewhat different need that the child *explain* and make explicit his thought in language. The Open Corridor, with its community of different teachers, offers a natural support for the child's need to explain. In this environment in which different children may do different things and see different possibilities in similar material -- and in which the end result is not completely prescribed or controlled -- what the child explains to the teacher or to other children may actually need explaining. He may offer a new view of great interest and stimulation to others, and may be so received. One of the linguists has discussed with us the negative effect of the pressure to produce and the positive effect of the chance for rehearsal. In the Open Corridor communities the pressure of whole-class standard is reduced and the chance for rehearsal in children's talk to each other, to animals, to puppets and in dramatization is maximized.

The evidence seems to be that for the learning of a second language it is best to allow a long intake period, just like a baby has of seven or eight months, with no demand on production but a context of experiencing and interaction with the adult in the experiencing. The demand for production seems to inhibit intake and narrow synthesizing of the forms of a new language. The Open

Corridor organization offers the possibility for support of these conclusions of international bilingual research.

I've often heard a young child or a child with difficult speech speaking to a rabbit or at a rabbit with another child nearby. Of course we still live with the demand for production, the teaching of a narrow patter that in fact is not the English language at all. "Say it in a sentence." "What kind of a day is it today?" "Hot." "Say it in a sentence." I hear kids tortured by "Today is Monday the fifth day of the tenth month." And I say to the teacher afterwards, "How about it? You going out today?" And she says, "Nah. It's hot." Or she says nothing, or she says "Yeah." She doesn't say it in a sentence. If she would ask the child another question, interestingly enough, it would come out right. It might be a limited sentence, but it would be a sentence. As the conversation progresses, one notices that the pattern of English sentences, or whatever language it is, comes out.

And so we encourage oral development, language of children in a meaningful setting, in a setting of emotional affect. If, as we encourage, we attach, from the very beginning where it applies, the written words, the spoken word, and the printed word altogether, and if the material is enlarging and is used frequently -- not in a 20-minute period but all through the day where it applies -- then we have at least a beginning and basic frame of techniques.

All our teachers -- and this is no apology -- are still using basal readers. The pressures of the institution -- of prescribed standard, of testing, of curriculum -- still exist and we are at a beginning, working in a *direction* of maximization of communication. We meet the teachers where they are, provided they want to go further, provided they want to look at this picture of language acquisition, language development, and the development of the child. If they say they're comfortable with their reading group, etc., fine. But we expand so that the songs the children know will also become reading material. We break up dictionaries that are far too difficult for children and we put the words that make a sentence around that experience, three or four around each experience, at the point where the child can begin to write his own stories, so that he can find the words he is seeking or ask another child for them. In all these ways we attempt as hard as we can to pin language and experience together with the growth of the child. And we ask for an immersion of everybody in what language acquisition is about and that they report what they learn of the developing process of language acquisition in the child. The organizational structure we have set up allows this study. We can learn more. We do not have last words yet and try not to bypass the problem by saying "Piagetian!" The last word will be found from continuous observation of the young child. So there will be another last word and another last word and another last word. And more and more and more. The learning more, it seems to me, is the task -- for us and for language teachers -- not the compiling of new tests or the correction of old ones.

LILLIAN WEBER

Language Games

Group games are great for developing oral language, some of which can be written down to be read out loud again. Group time is important in open classrooms where so much individual work goes on. It's a time that promotes a good feeling of togetherness and group interaction. Language games can be fun in a comfortable, familiar group in an atmosphere that is relaxed enough for anyone to take a risk and join in.

- Choose an object that is somewhat abstract (a shell, rock, branch, etc.). Pass it around the circle. Everyone tells one attribute of the thing: for example, It is sharp, It feels cold, It has yellow spots. Have someone record this. After you've done it with a number of objects, the children can try to match the correct written description to its object.

- Same as above, but instead of attributes, children say one thing the object makes them think of or feel like: for example, It reminds me of the sea, It is a cave for a mouse, It makes me think of flowers. Write all this down and you will have an instant group poem. It can be illustrated or just read and appreciated.

- Pick two initials (G.P., L.M., R.B., etc.) Go around the group, each person giving a two-word phrase for those initials; for example, Good Party, Girl Pigeon, Lady Margaret, Look Ma, Rotten Banana, etc. If a child cannot think of two words, he can, instead, change the initials by calling out any two more; play continues.

- Pictures -- round robin -- each person adds to a story as he chooses a picture from a pile. Must make sense, that is, be a continuous story, but can be very imaginative.

- Pictures -- advertisement game -- hold up pictures one at a time while children make up advertisements, slogans to go with them -- real or imaginary.

- Use a live animal (gerbil, turtle, fish, etc.) or a picture of one. Put animal in center of group. Each person tells something about the animal like this: "A turtle has _____just like people, but _____." Or "A gerbil has _____ just like people, but _____." The comparison can be very interesting, like, "A turtle runs just like people, but not so fast." "A gerbil has hair just like people, but much more of it". "A fish has skin just like people, but his is shiny."

- Try some of Kenneth Koch's ideas:*
  *Tell the biggest lie you can think of.
  *I wish I were _____; then I would _____.
  *With my third eye, I can see _____.
  *I seem to be a _____, but really I am a _____.
  *Last night I dreamt .....
  *Once I was a _____, but now I am a _____.

* WISHES, LIES AND DREAMS: Teaching Children to Write Poetry (Random House)

- Story Maps. Cut out or draw a series of unrelated pictures. Mount them on cardboard like this:

Children can tell a story, following the "map," using the illustrations as a guide. They may write it down or tape record it. It's fun to listen and compare stories.

- Round Robin stories. Children sit in a circle. First person chooses a picture as a starting point. Next child chooses a picture and adds to the story, weaving in his picture. Each in turn must add to story with his chosen picture. Mix in phrases, sometime, too.

- Go on a "sound walk." Walk through the corridor or just around the room looking for things that begin with S (or T or M, etc.) or have that letter at the end or in the middle. Make a list.

- Listen and draw. Two people face each other with a screen between them (a piece of cardboard or an easel). One draws a picture and meanwhile describes it to the other. The other person tries to duplicate the design by listening carefully. Was the communication effective?

ELLI DUMONT

Language and Early Reading

Some suggestions culled from work by advisors:

1. The teacher must make every effort to frame questions that elicit more than "yes" and "no" answers.

2. The child should be encouraged to *tell* about things that are important to him and that he has done and to dictate stories about these. Experiences common to a few of the children or to a whole group can be the source of a group dictation.

3. Words can be defined by a child or by a group: *quiet as, deep as, above, below, inside, outside,* etc. These definitions added up become stories. Movement experiences can help with definitions of words, and words can be attached to movement experiences: *move softly, stamp, jump, run, spring like a wire,* etc. Movement games (Did You Ever See a Lassie?) begin to mark left and right foot, left and right hand. As the year goes on, the teacher may introduce to the movement experiences directional signs: for example: jump, sit, stop, hop, one jump, boys jump, girls jump.

4. As children make things, they may need signs to identify their activities and to add more meaning to them: signs on block buildings; signs for the activity in the house corner; signs at the water and sand tables, etc.

5. Children will be identifying their names, which are put on all products, and very soon they will be writing them. (The teacher should make a point of noting and naming the hand the child uses to write with -- right, left.) As one specific activity, the children are asked to find their own name cards (first and last names) and are given a blank card on which to copy them. A letter of the alphabet is placed on the table and children whose names begin with that letter come forward to do this activity. As children see the different letters in each other's names, these differences can be noted; thus, most of the letters of the alphabet will become known -- though not sequentially.

6. The teacher will form a group based on the alphabet, saying, for example, "If your name begins with ... (sounding a letter)." Thus many of the beginning consonant sounds will become known. The teacher could accumulate a pile of pictures of objects from which the child could pick those with names that have the same beginning *sound* as his name.

7. The teacher can have a box of letters on a table and cards with combinations of these letters. The child matches letters to the cards.

8. Letter Strip

   Make a long oaktag strip showing capital and lower case letters. Children match letters to strip.

9. Go Fish

Provide a huge collection of pictures and a pile of alphabets. Have child select a picture from the pile and then find an alphabet which is the beginning letter of what is shown in the picture. Later reverse and have child select an alphabet and find a picture of an object that begins with that letter.

10. Sound Dictionaries - beginning sounds

The teacher provides magazines and catalogs containing an abundance of pictures. When a particular consonant sound is being studied, the child is asked to find pictures of objects that begin with that sound. He cuts them out and pastes them on the appropriate page.

11. The numerical sequence can also be built in a personal way: it would start with the age of the child; the number of people in his family, the floor he lives on; the number of children at his table; the number of children to match his age he invites to his birthday party, etc. Words identifying number and the numerical symbol are used quite incidentally as part of these experiences.

12. The teacher will read to the children often. Subsequent activities would be: discussion about the story, dramatization, recalling sequence, demonstrating the top and bottom of a page, the beginning and the end of a story, and the directional pattern of the lines of print. The teacher will ask different children to indicate on or more of the latter points when a story is read. If the story is repetitive, the teacher will note the repeated word, and perhaps the child can point it out the next time it is used.

13. The sequence of the year itself and of the experiences in the year are recalled: Remember when -- before, after.

14. The children will begin to know certain favorite stories and songs. The most repetitive of these can be charted as simple sight reading ("Three Little Kittens" -- "One Little, Two Little, Three Little Indians"). Children can find the repeated word and can count the number of times it is used. Oaktag phrase strips and word cards can help them recreate the story.

15. Directional signs may suggest an activity. It is important that the signs be looked for as telling something. There must be just one or two of them and they must be changed often. A new sign may be introduced in discussion and then looked for. It may be one of the signs used in movement. A sign "look" may indicate something to be looked at.

16. Together with long dictations, the teacher would begin to write a single line story under a child's drawing leaving room for his copying underneath. This can be read back as often as the child desires.

17. Children may have a small book in which they can write numbers and a small book in which they can write letters copying these from the teacher's illustration or a chart. There is no virtue in lots of copying. Writing "1" once and "a" once is quite sufficient. Indeed, if the child is doing that as part of his name anyway, perhaps no copying of that letter is needed and he can find another letter to copy.

18. Very, very simple books with a very few words and very few pages may be left around. A child may find to his delight that he can read these. There should be lots of such little books around.

19. The teacher places printed cards on the blackboard ledge. She pronounces a word and asks the child to choose the card containing a word that begins with the same sound as the word pronounced.

20. Final Sounds

    A child is given a card which has six words written on it. He is also given a number of smaller cards, each having a word. The child goes through the small cards to find words that rhyme with those on the large card. When the rhyming word is found, it is placed beside the appropriate word on the large card.

21. Word Building

    A number of word families and three or four sets of consonants are placed in envelopes, and the envelopes are given to the children. The child correctly assembles the words.

22. Word Puzzles

    Use colored construction paper. Write all of the letters of the alphabet on individual pieces of paper. Write a word family on another piece of paper. The edges are cut in such a way as to insure that the initial consonants which make a word with that family fit into the given paper. The vowels and other initial consonants which do not make a word with that family do not fit. The child assembles the puzzles.

23. Letter Cubes: Word Families

    Thread four small square beads on a pipe cleaner. Knot the pipe cleaner at each end. Write individual letters on sticky peel-off price labels. Stick the letters on the exposed side of the cubes. The child turns the beads to make many different words.

24. Dominoes

    The teacher makes phrase cards that resemble dominoes. The children match the phrases as they match dominoes.

25. Word Strip (making sentences)

    Provide an oaktag strip and paper clips. Write words of sentence on individual cards. Give the child a number of words clipped together. Have him make a sentence by clipping the words on the strip. (It is a good idea to use familiar words with one or two words the child finds difficult.)

26. Sentence Puzzles

    The teacher writes a sentence on shirt cardboard. She cuts the sentence into a puzzle. The puzzle pieces are clipped together and given to the

child. The child makes the sentence by assembling the puzzle.

27. Word Folder (adapted from Mackay and Thompson)

    Each child has a word folder containing a store of words. Provide some blank cards in each folder so that the child can add words. Provide a stand on which words from the folder can be set up as a text. The children may then proceed to construct, enlarge on, or re-form sentences.

28. Small Books

    Have children make small books consisting of experience stories. Use these as a basis for Word Folder, sentence puzzle, and word strip activities.

29. Math Sight Words

    Post color (blue, green etc.) and shape (circle, square, etc.) words as well as other words used in math games for sight reading.

30. Post songs on the walls for sight reading. Use a different color for each word. Use street or jump rope songs, rhymes, chants, etc. Leave space for additional rhymes or chants. Blank out some words. Children supply words from word packet or file. First and second graders like silly rhymes.

31. Class Books

    Make class books of rhymes, puzzles, etc. leaving space for children to add to them.

32. Constructions

    The children work in groups. Each group is given a set of picture cards and also a set of word cards. These words are key words for particular constructions. For example: "if, maybe, whenever, perhaps, sometimes, in case, unless." The teacher gives each group a key word to use and writes the word on the blackboard. The group then has to use their pictures to make up a sentence using the key word. Children select pictures that tell a story and words to match those pictures. Words may be used to fill out the picture story.

CITY COLLEGE ADVISORY SERVICE

Spelling

A child first encounters spelling through reading. He is introduced to books, experience charts, captions and signs, and eventually acquires a stock of words he knows by sight. As his awareness of encoding develops, with help from the teacher in sounding out words and understanding sound-symbols, he begins to apply his phonetic insight to his own writing. He starts to create for himself words that are not in his memory bank of sight words.

Here is an example: Applying her memory of reading words and her newly acquired grasp of a sound-symbol relationship, six and a-half-year-old Pam wrote, "One day a litel gerl went to the fair she got sum coten candy it was good yum yum siad the gerl she got a doll and a ball it was time to go the boll bounst good and the doll werct good."

We accept Pam's writing. We are pleased that she has stretched her understanding of word structure to try "bounced" and "worked" and "cotton." Although she had encountered "girl" and "some" before, she did not write them from memory, but quickly put them together with her phonetic know-how, because her goal was to tell the story.

Pam took risks to write those words. She had no anxiety about making a mistake; such feeling would have limited the extent of her effort. For the time being the teacher will make a note of Pam's misspelled words. He may give them to her to put in Pam's own dictionary of words consisting of a book with a page for each letter.

Pam's misspelled words will appear in the room on captions for pictures and in word charts. Pam's story will be on display for awhile and then kept in a book of Pam's stories.

The teacher encourages Pam to write more stories. He does not ask Pam to correct or recopy her story. When Pam and others like her have a sense of confidence in their own writing the teacher will explain that we write things down so that we may share our ideas with others. We have a way of spelling words that is always the same so that other people reading our writing will be able to understand what we have written. At *that point* he will help Pam to correct her mistakes or suggest she copy over her story or report for display so others might enjoy it.

As teachers we need to keep in mind that if no one reads a child's writing the writing will stop. We encourage the child to try, to take risks and to feel confident in his ability to express himself. At the same time we continually enlarge his use of written language and standard spelling through books, captions, labels, and word cards, which are kept accessible for him when he writes. Our aim is toward writing that can be read and appreciated by all.

When do we begin to have children correct the spelling on their original writing? The answer to this question varies for each individual child. The

consequences of delaying accuracy in spelling are not comparable to the consequences of limiting a child's free use of writing. Pressure for correction can limit a child's willingness to take risks and thereby reduce his exploration into the nature of language. The sensitivity of the teacher to each child's readiness is the best time-gauge. Children will certainly vary by several years in their sense of confidence with writing. Children who are writing in a second language often begin to write spontaneously in the new language, applying phonetic rules from the first language, which may not be wholly applicable, and often with a somewhat shaky understanding of the correct sound of the new word. Children construct their own rules for writing based on their insights into language formation. They are generalizing from previous language experience. Praise and encouragement for this important process are essential at this step. Offering them the corrected words to write in a dictionary or vocabulary book is certainly in order once they've established some flow of the new language. The decision regarding when to correct or copy over spelling errors or when to simply solicit more stories will depend on the teacher's estimate of what will best support the child's development of writing.

The interaction between writing and reading is vital in the development of each. A child's involvement with writing extends his facility with reading just as the reading builds the word bank and suggests possibilities for further writing. To implement both skills it is important that children's encounter with their daily world is deepened in the school by broad experience with materials and the enviornment. Language is stressed when children converse with the teacher and with each other as well as read and write about their experiences. The more a child is genuinely engaged with the curriculum the more he will have to write about.

When writing becomes an important means of communication to him he will be anxious to share it, to have it displayed and to take it home. He will develop a willingness to make it accurate and legible. Parents and teachers can help him arrive at this stage by an accepting and appreciative attitude toward his efforts to express himself in the written language, remembering that neatness and accuracy alone, without real ideas and rich description, can be bland and dull.

To support children's early efforts teachers display their work. It is wise, however, to shelter work that is misspelled from prominent display in corridors if it is likely to bring adverse criticism from visitors or other children in the school. It would be better to display the work in the accepting environment within the classroom. After being displayed for awhile the paper can be saved in a folder of the child's work. When the accurately spelled paper is finally offered to the more skeptical parents or supervisors, the occasion will be a reinforcing experience. The desire to write further will be enhanced as will the child's sense of pride in his accurate form of presentation.

NANCY SCHAFFER

Science Experiences and Materials

BLOCKS. All sizes and shapes for finding out about balance; spatial relationships; mathematical relationships.

WATER. Floating and Sinking (test many objects before generalizing): Wood, paper, metal, wooden boats - metal boats, plastic, leaves, seeds, cloth, sponge, soap, metal spoons, wooden spoons, plastic spoons.

Dissolving: Sugar, jello, flour, powdered soap, food coloring.

Absorption: Use all of the above plus blotters and add the component of time. How long does it take a blotter or a piece of cotton to absorb a tablespoonful of water?

Form: Spilled water. Drops of water with a straw or eyedropper. Compare spilled water and sand.

Puddles: Reflections -- waves and ripples

Pouring and Measuring: plastic bowls, bottles, pans, funnels.

Displacement: Two things cannot occupy the same space so water level will rise: 1) Rock in a bowl of water. 2) Blowing air into water thru a 1/2" or 1" rubber tube.

Melting--Freezing: Paper cups filled with water on a window sill or fire escape overnight.

Gravity and water: Make a stream in a sand pile.

Steam -- fog: Hot plate and tea kettle. Chilled bottle for catching "fog."

Suction: Siphon a rubber or plastic tube. Try to remove as much air as possible by submerging and be sure one person keeps one end of the tube under water, while another sucks out the small amount of remaining air.

Evaporation: Water in a flat dish; perspiration on a hot day

AIR. Strength of air. Lifting a book by blowing air into a balloon under the book. Tire pump, Baggies, Straws. Soap bubbles. Growing *plants* with or *without* air.

Candle -- with or without air.

Sound and Air: Comb and tissue paper, juice cans and string.
3" plastic or rubber tube for whispering, speaking and listening.
Triangle held touching body and away from body so air can move all around it.

Evaporation: Moving air cools water.
Water moves from an uncovered dish into the air.

Temperature: A large thermometer for measuring air and water. Also a toy Thermometer can be made of cardboard and elastic.

LIGHT. Shadows -- measuring at beginning of school day and at noon.

- .Shadows with a flashlight
- .Two flashlights: light travels in a straight line, two children can make the beams cross
- .Mirrors for reflecting light -- two children can make reflection meet
- .Gelatins and Cellophane -- Plastic color puddles
- .A glass prism
- .Day and Night
- .Light and the seasons. Winter. Dark at suppertime
- .Summer -- playing outdoors after supper

Electricity: One large dry cell, wire, bell, flashlight, bulb, switch.

Magnets: Large bar and horseshoe magnets. Iron Filings. Egg cartons to collect small objects which magnets do attract.

Growth and Living Things: Hatching Fertile Eggs. Guinea Pigs and large Turtles are best animals for pre-school. Fall and Spring Leaves -- Leaf pictures: (1) pasted (2) between sheets of color contact. Collection of outdoor things -- twigs, buds, bark. Twigs picked from a living tree in February will have baby leaves and possibly flowers if you keep them in a container of water in the classroom. Terrarium -- Broken up charcoal on bottom of a plastic box, then a layer of earth. Plant small ferns or any small woodland plant inside. Cover with another plastic box. Moisture will form on sides of box as plants give off moisture. Seeds in soil or on moist paper towel or sponge. Carrot tops -- onions -- potatoes -- turnips.

Weighing, Balance and Measuring: Six foot board -- large blocks, Scales with weights like a baby scale. A pan balance. Measuring sticks: a home made ruler using a child's foot as the unit or measure. Estimation of height, weight and volume before measuring.

RUTH HOWELL

Terrariums--
Woodland, Desert or Marsh

Develop a terrarium to show the interdependence and interaction among plants, animals, water, soil, and energy.

Materials
- container
- cover
- gravel
- charcoal
- soil
- plants
- water
- dish

Animals
- insects
- chameleon
- worms
- toad
- iguana

Common problems in maintaining a balanced terrarium:

- mold
- plants die
- animals die
- overpopulation of insects
- overpopulation of animals
- overpopulation of plants
- too wet
- dries out
- plants turn yellow

If any of the above occurs -
a. systematically - find out what went wrong
b. correct it

Some learning implications in setting up and studying a terrarium:

1. Plants

- shape of leaves
- vein pattern
- stem-leaf pattern
- thickness of stem
- growth of leaf
- "holes in underleaf"
- size of leaf as compared to the thickness of stem
- color
- direction of leaf growth
- leaf cluster, single or multiple
- how does plant get water?
- how does plant get energy?
- root structure
- how does plant reproduce?
- does the plant move?
- what do the seeds look like?

What accounts for the similarities among the different terrariums?
Why can or can't certain plants survive in one, two or all of the terrariums?

2. Presence and Effect of Water

- evidence of water
- rate of evaporation
- amount of condensation
- accumulation of water as compared to the amount of heat
- amount of water needed by different plants
- amount of water that has to be added
- amount of water different animals need

What are some variables affecting the above?

3. Soil

- color
- components
- growth
- evidence that it's used as a habitat
- evidence of life living within it
- interaction with animals
- interaction with vegetation
- quantity
- absorption of water

Care of the terrarium:

- cleaning
- thinning - animal and plant life
- placement in room

Correlation and integration with other curriculum areas:

1. Math

- measure and weigh components
- graph quantities of food, water, soil
- indicate ratio of lengths and quantities (leaf to stem, amount of water evaporated/amount of water provided)
- counting and estimating: insects; animals; population
- graph plant and animal growth

2. Language and Reading

To support language development and reading fluency , opportunities to talk and write about the terrarium and observations should be provided. Many books should be available for children to have at hand when seeking information. Graphs, charts and records should be kept to help organize and keep information.

3. Literature and Poetry

There are several trade books and poems that support and describe ecosystems and their respective elements.

4. Dramatic Play and Block Building

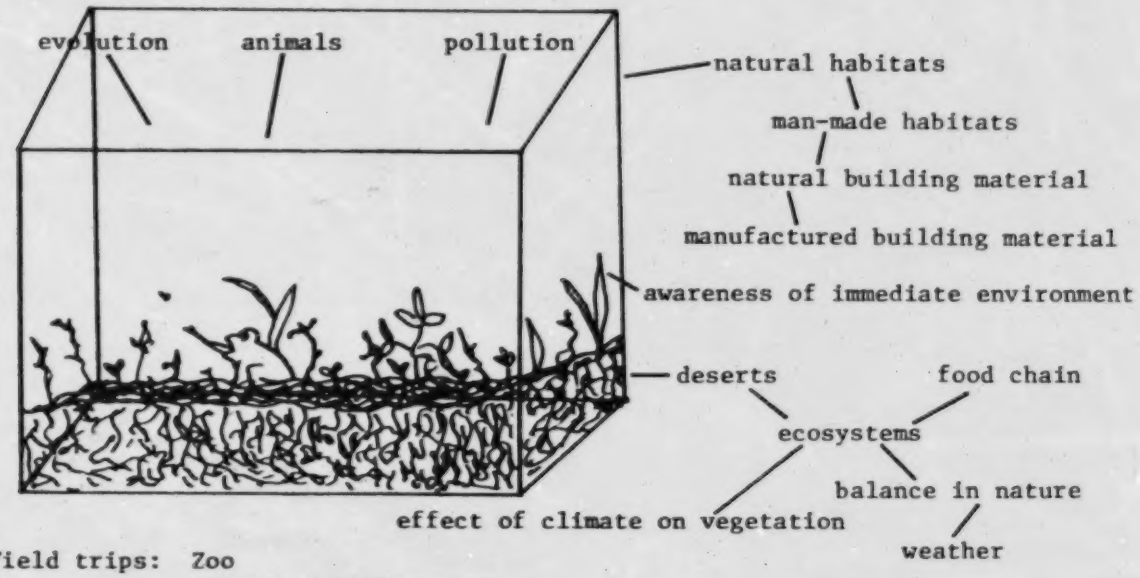
Children may "dramatize" - write plays using information learned from observing and finding out about terrariums. Older children will perhaps correlate this with early explorers (Daniel Boone) or legendary heroes (Paul Bunyan, Johnny Appleseed).

Block building encourages children to construct habitats and specific environments.

5. Art

- sketch animals
- leaf prints
- study tracks
- weaving
- plant collage
- make dyes out of plants
- cook plants

Where can an interest in a terrarium lead to?



Field trips: Zoo
Botanical Gardens
High Rock - Staten Island
Jamaica Bay
Parks

Investigate food chains.

1. Plant dies - bacteria interacts - decayed material - humus in soil - plants use as nutrient

2. Sun - photosynthesis - starch and sugar - soil - plant - animal

Investigate cycles.

- oxygen
- water
- carbon dioxide
- nitrogen

BONNIE BROWNSTEIN

A Short Field Trip

The following suggestions are meant as a guide for a short outdoor experience that introduces several areas of inquiry. This guide should first be reviewed with the children. Materials should then be provided for each student, and finally, groups should be arranged. Not all the areas introduced will spark every child, but the teacher can observe which are of most interest to various children. Questions are likely to be raised about the following:

1. shadows, relative motion, time, seasons, earth-sun positions

2. rubbings, patterns, texture, classification, identification, printing

3. collecting, man-made vs. natural objects, classification, ecology, social behavior (for example, in relation to litter)

4. branch-twig-leaf arrangements and growth, identification, estimation

5. collage -- and possibly, further use of natural and manmade "found" materials in weaving or sculpture

MATERIALS

.5 sheets of light colored or white paper and a dark crayon
.a yardstick or ruler
.a bucket or box
.white blackboard chalk

OUTDOORS

.Measure the length of your shadow when you go out and again when you are ready to return. Record the lengths.

.With chalk, on a hard surface, draw the outline of the shadow of something that won't move. Watch this shadow for 5 minutes, making new drawings at 2 and 5 minute intervals. Record the drawings and the questions.

.Place a white sheet of paper on a surface, such as the sidewalk, tree trunk, or car tire tread, and rub the whole paper with the full length of an unwrapped crayon. This is a *rubbing;* Make rubbings of 5 different surfaces.

.Collect a box full of inanimate objects lying loose on the ground to work with later inside the room.

.Look at tree or shrub branches. Describe -- in words or a drawing -- the different ways leaves are arranged on a branch.

.Count the number of leaves on a small branch. Record this number. Estimate how many branches there are on the tree. Record this too.

After the collecting and recording trip outside, it is important to follow up with the following inside activities.

INSIDE

.Compare your shadow records and questions with others. Which points do you agree or disagree on? Which questions can't you answer? What would you have to study about to get closer to the answers?

.Show your rubbings. Can others guess what they are? How are they alike and different?

.Arrange the box or bucket material in 2 big groups, by classifying them. What names describe the 2 groups? Now reorder them in 3 groups. What names describe the groups? Arrange the objects in a new way. Decide how many groups to make and how to name them.

.Try to make a picture or design from the box objects and glue them to a large sheet of paper. This kind of artwork is called a collage.

The end of the first indoor session should include planning by each student, or groups, for a second trip outside. Some children may wish to repeat an activity, others to get to one they missed, or respond to new questions raised. Encourage each student to make rubbings, watch shadows, trace outlines, and collections. Even though students may work in a group, for social reasons, don't settle for less involvement for the sake of expediency (such as appointing a "collector" for each group). The more children who participate, the greater the potential for raising new questions and enhancing individual motivation.

Finally, plan some of your own short trips and follow up sessions as you explore the area around your school.

DAVID W. BOLE

Movement and Music

Observation by the teacher is the key to understanding children's movement and to helping them develop an awareness of their movement. Based on her observation, the teacher will gradually shape her role to know when to offer a suggestion as stimulus, when to withdraw and continue to observe what is happening, and when to help in skill development.

Movement involves:

1. Ways in which we move our bodies -- curling, stretching, twisting, etc. -- the parts of the body involved in a movement -- and the shapes that emerge -- wide, narrow, round, flat.

2. Time and energy. Is a movement sudden, sustained, quick, slow, strong, light?

   Quality. Is it flexible, direct, flowing, continuous?

3. Direction. Is the space at a level with the body -- near, around, away, or toward? Is the space curved, twisted, etc.?

4. How the individual and group relate: lead -- follow, near -- apart, meeting -- parting, passing, etc.?

Basic movement can best be presented as questions or tasks for the children, not as a pattern supplied by the teacher to be copied by the children. Each child is encouraged to explore the task and respond in the way that he chooses. The teacher may raise additional questions or tasks to give further guidance or stimulation; for example, "Let me see how you can run" may be followed by "Show me how to run quietly" or "What happens to your feet when you run quietly?"

Progression and variety in movement can be obtained by:

- .having children find a different way to do something
- .using varying amounts of force -- heavy/light
- .changing direction and/or level -- high/low
- .changing speed or combining different speeds
- .combining different movements that are in strong contrast (sustaining a smooth movement, such as floating, is more difficult than quick, angular ones)
- .changing shape slowly from one to another
- .*giving children time* to explore a movement before going on to another
- .helping children move from individual to partners and small group patterns; planning together

The relationship between sound and movement is a natural one for children. Encourage children to listen to foot sounds made in movement; to add voice sounds to their movement. These are just two examples of sound and movement.

MUSIC MAKING

Through exploration children may discover the nature of sounds:

.by making and listening to distinguish the various characteristics of the sound makers, such as resonation of the cymbal, voice sounds, foot sounds, hand sounds, pitch differences of the xylophone

.by discovering the various sounds that can be produced from one instrument, or the body

.by using the pentatonic scale (any 12356 pattern as CDEGA) as the base for creating melodic patterns

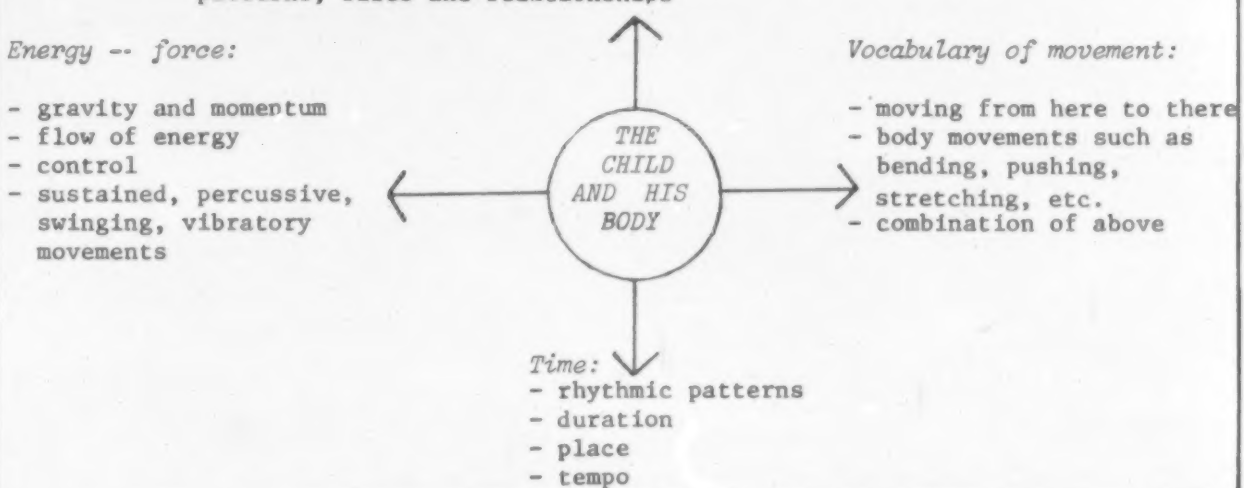
.by expanding exploration in different timbre, speed, pitch, and dynamics; using voice, instruments, words, jingles

Materials that may be used in movement and music making:

Cheese cloth — dyed
Scarves -- various lengths and squares
Tubular jersey, cut in sections
Sheets of colored tissue paper
Thick rope
Elastic cord
Corrugated plastic tubing
Feather dusters
Coconut shells
Funnels and tubing
Plastic containers, pails and bottles
Graduated lengths of wood or metal as marimbas
Hoops
Rib bones from a roast of beef

CONCEPTUAL FRAMEWORK OF MOVEMENT

Felt Space: in relation to the body, to the space around the child, shapes, patterns, sizes and relationships



MARIAN BROOKS

Math: A Study of Fractions

Beans and peas -- kidney beans, lima beans, chick peas, blackeyed peas purchased in any supermarket and all mixed together -- are an excellent nonstructured material that can be utilized to motivate and develop concepts of fractions.

One Mode of Experimentation

As with all materials the first requirement is to play and explore their qualities. An art project using beans and paste can be this vehicle. The project would be a design made with the beans.

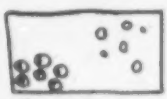


Figure 1

Figure 2

The pictures on analysis show that the beans have been classified and categorized in the making of the design. For example: there is a group of blackeyed peas in one corner of Figure 1 and a face made of lima beans in Figure 2. After the design has been enjoyed it is time to sit with the group and analyze one or two of the pictures that show a few simple rules of organization. For example: In Figure 1, where would you expect the blackeyed peas to be put if there was another one in the picture?

Now use the beans in the reverse order: pairs of students work together with a handful of beans chosen from the mixture box and decide on a rule of classification. This activity is similar to a card selection of category -- say triangles -- and the box of attribute blocks. One pair of students writes the rule for inclusion and the logical rule for exclusion: If the rule is all large beans, the ones that are left out are those that are *not* large. It is fun to have another pair of students look at the arrangement and place a bean in each section stating the rule as they see it.

This activity, in my experience, develops into more complicated rules when the student pairs are asked to put the beans back in a heap again and again and asked to reorganize them in a different way.

An interesting sequence of events falls out of this activity:

1. The beans are organized by color first, e.g., all reds.
2. The beans are organized by size, e.g., all large.
3. The beans are organized by shape, e.g., all round.
4. The beans are organized by two attributes, e.g., white and round.

The objective of this activity is not only to have students organize the materials, but also to have them describe the classification.

After working in this context, there is a need to record the sample. Colored

blocks, wire mesh or graph paper become the vehicles where each bean is placed in one-to-one correspondence with the unit items. In the following description, I will use graph paper. All the beans in the handful chosen could be placed on the graph paper in a long straight line, or in the shape of a rectangle. (If a few beans are missing to form a complete rectangle, choose some more from the box.) Once the total sample has been arranged, a number of similar-sized pieces of graph paper are cut. The beans are then organized on the sheet according to a rule.

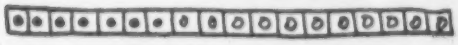


Figure 3

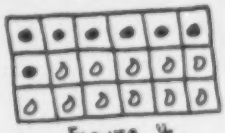


Figure 4

The rule, reflecting Figure 3 and Figure 4, may be written as: 7/18 are red and 11/18 are *not* red. What better way is there to interpret the mathematical statement, "The whole is equal to the sum of its parts?" It should be noted that this brings up interesting fractions in a natural way as well as discovering the concept of 1 in its varying fractional formats.

This activity of recording and analyzing can be extended in different directions, such as:

1. developing a story about "My Handful of Beans," in which different decisions and a graph for each are compared;

2. developing a story where the decision remains the same but the samples of a handful are taken again and again to see if there is a pattern;

3. developing a story where the decision is the same but the size of the sample changes, e.g., one handful, two handfuls, a cupful. This study might determine how accurate a sample is or what size sample will give the best picture of the bean distribution of the whole box.

With this study of mathematics I like to go back to the original motivation of the picture and analyze it in terms of the whole and the sum of its parts in graph and mathematical fraction language.

Another Mode of Experimentation

Start with an art project that requires that the beans be pasted in a linear design where they never meet and which does not intersect itself. In mathematics this is called a simple open curve.

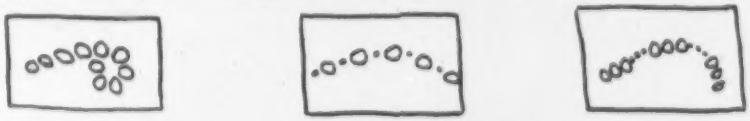


Figure 5

It will be found that some of the designs do have a pattern.

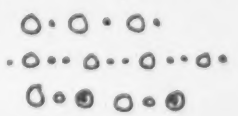


Figure 6

Using any one of the designs, study them for decision making and continuation of a recognized repeated pattern. It begins to become apparent that there are criteria in pattern making:

1. The objects are put together in distinct links, each link being exactly the same as the previous one.

2. The pattern can be communicated in a definite rhythm. Large-small-small, large-small-small.

3. The pattern is recognizable: anyone can identify a total link and reproduce it.

4. It can be recorded in pictures or words.

From my experiences, the intricacy of the link indicates a person's sense of design. I have found that people who make the simple patterns with success are at that level and when asked to make another pattern do one on the same level.

Sample of an original pattern:

○•○•○•

Sample of a second one immediately following the first:

•○•○•○

Let us say we started with the art project and then abstracted the pattern work to a linear arrangement where each pair of students made a conscious decision on a pattern, wrote it down, produced and recorded it. A second pair examined it and added one more link.

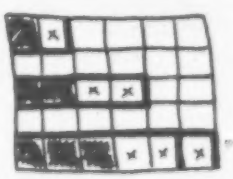
Now we will extend the pattern repeats into mathematics. We will use the squared paper where the beans match the unit one-for-one. First we will use a simple pattern, where the beans are placed on the squares in pattern form and then recorded.

one pattern •○

one pattern one repeat •○•○

one pattern two repeats •○•○•○

Beans



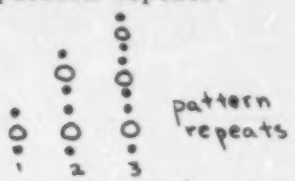
Record

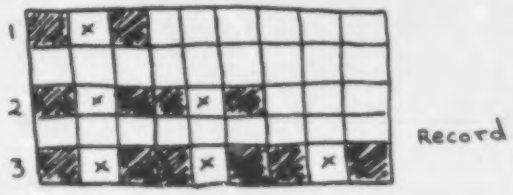
In regrouping them in what seems to be a more orderly organization, the following occurs and is recorded:

one set •○ two sets ••○ three sets •••○○○

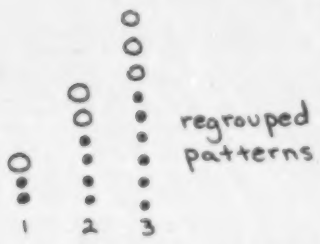
This pattern can be seen and described in relating the • to the entire pattern •○ as 1 out of 2, 2 out of 4, 3 out of 6, or written as {1/2, 2/4, 3/6} which is the set of fractions equivalent to 1/2.

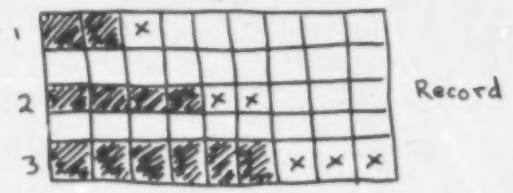
In the pattern •○• •○• •○• we first organize them vertically by sets of pattern repeats.





Now reorganize by groups that belong together:





Now study the • as compared to the whole: 2/3, 4/6, 6/9

the ○ as compared to the whole: 1/3, 2/6, 3/9

the • as compared to the ○ : 2/1, 4/2, 6/3

All the comparisons lead to equivalent fractions. It also appears that the growth pattern is predictable.

Consider the variations that can occur if the request is for a pattern of six beans:

• to whole pattern 1/6
○ to whole pattern 2/6
◑ to whole pattern 3/6

If we follow the same sequence, we should go back and analyze the open curve designs graphically and mathematically.

This study of patterns and beans and peas has led in a unique manner to relationships, fractional understanding of relationships and to a pleasurable exploration of the qualities of beans.

ANN PESKIN

Resources

PEOPLE AND PLACES

BLACK STUDIES

African-American Institute
866 UN Plaza, N.Y., NY
421-2500

School Services Division
African-American Institute
833 UN Plaza, N.Y., NY
661-0800
(Evelyn Rich, Director)

African-American Bookstore
16 W. 125 St., N.Y., NY
348-0373

Museo Del Barrio
1945 Third Ave., N.Y., NY
831-7272

Schomburg Collection
103 W. 135 St., N.Y., NY
281-0700

Children's Art Carnival
641 St. Nicholas Ave., N.Y., NY
234-6266

Afro-American Arts Cultural Center
222 W. 134 St., N.Y., NY
234-0383

Harlen Cultural Council
170 W. 130 St., N.Y., NY
831-5292
(Ms. Pura Belpre White: Hispanic Storyteller)

Olatunji Center for African Culture
43 E. 125 St., N.Y., NY
427-5757

Aunt Len's Doll and Toy Museum
(Mrs. Lenon Holder Hoyte)
6 Hamilton Terrace, N.Y., NY
926-4172

Studio Museum in Harlem
2033 Fifth Ave., N.Y., NY
427-5959

Museum of the American Indian
155 St. and Broadway, N.Y., NY
283-2420
(Library: 9 Westchester Square
Bronx, NY 829-7770)

Hamilton Grange National Memorial
287 Convent Ave., N.Y., NY
283-5154

James Van Der Zee Institute
103 E. 125 St., N.Y., NY
722-5515
(Photography collection of historical Harlem)

American Committee on Africa
164 Madison Ave., N.Y., NY
532-3700

MUSE Neighborhood Museum
1530 Bedford Ave., Brooklyn, NY
774-2900

Brooklyn Museum
Eastern Pkwy & Washington Ave., N.Y., NY
638-5000
(Ms. Sharee De Karaba: African Artifacts and Crafts)

Weekesville Preservation Society
Long Island Historical Society
1698 Bergen St., Brooklyn, NY
Mr. James Hurley Home: 756-3867
Business: 624-0890

ASIAN-AMERICAN STUDIES

Asian-American Resource Center
Basement Workshop
22 Catherine St., N.Y., NY
964-6832

Chinese Historical Society
21 Eldridge St., N.Y., NY
925-6708

Association of Chinese Teachers
Mr. Sam Chu
Home: 824-5122

Chatham Square Library
33 East Broadway, N.Y., NY
964-6598

Chinatown Committee for Better
Education for Children
Meets at the Basement Workshop
(22 Catherine St.) every Sunday.
Phone Janice Wong or Kai Lok Wong
at the Workshop (964-6832)

Asian-American Field Study
(Danny Yung)
32 East Broadway, N.Y., NY

United Asian Communities Center
43 W. 28 St., N.Y., NY
684-9276

Asia House
112 E. 64 St., N.Y., NY
751-4210

Japan Society
333 E. 47 St., N.Y., NY
832-1155

China Institute in America
125 E. 65 St., N.Y., NY
744-8181

Japan National Tourist Organization
45 Rockefeller Plaza, N.Y., NY
757-5640

SHORT BIBLIOGRAPHIES

TERRARIUMS AND PLANTS

TERRARIUMS AND MINIATURE GARDENS
Kathryn Arthurs (a Sunset Book)
Lane Books, Menlo Park, California
paperback, $1.95

GARDENING WITH TERRARIUMS
Rex Mabe (Potpourri Press, Greensboro,
N.C.) paperback, $1.35. Available at
the Pottery Barn, 231 Tenth Ave., N.Y., NY

NON-FLOWERING PLANTS
Floyd Shuttleworth and Herbert Zim
(Golden Press, N.Y.) paperback, $1.25

THE LIVING WORLD
David Stanbury (Crowell-Collier Press)
paperback, $2.50, 2 vols.

TIE-DYE, BATIK AND CANDLE MAKING

TIE-AND-DYE MADE EASY
Ann Maile (Taplinger) 1971, $10

TIE-AND-DYE AS A PRESENT DAY CRAFT
Ann Maile (Taplinger)

TIE-DYE
Sara Nea (Van Nostrand Reinhold) 1971,
$2.95

BATIK
Sara Nea (Van Nostrand Reinhold) 1971
$2.95

BATIK THE ART AND CRAFT
Ila Keller (Charles E. Tuttle) 1966,
$5.25

BATIK ART AND CRAFT
Nik Krevitsky (Van Nostrand Reinhold)
1964, $7.95

BATIK AS A HOBBY
Vivian Stein (Sterling) 1971, $3.95

BLOCK AND SILK SCREEN PRINTING
G. Ahlberg (Sterling)

SILK SCREEN TECHNIQUES
J.S. Biegeleisen (Dover)

DESIGN ON FABRICS
Meda Johnston (Van Nostrand)
Reinhold)

BATIKS AND HOW TO MAKE THEM
Rieter Mijer (Dodd, Mead)

THE CANDLE BOOK
Carli Laklan (M. Varrows) 1956
$5.95

KITCHEN CANDLE CRAFTING
Ruth Monroe (A.S. Barnes) 1971
$6.95

CANDLE MAKING
Susanne Strose (Sterling) 1971
$2.95

GETTING STARTED IN BATIK
Astrith Deyrup (Bruce) 1971
$2.95

NEW YORK GUIDE TO CRAFT SUPPLIES
Judith Glassman (Workman) 1971
$2.95. A shopping guide to over 500 of New York City's craft suppliers. Contains addresses, phone numbers, hours, specialities, and prices.

Museum Book Inc.
48 E 43 St., N.Y., NY
682-0430
carries a very large variety of books on arts and crafts

American Craftsmen's Council
Research and Education Dept.
29 W. 53 St., N.Y., NY
can be very helpful

HETEROGENEOUS GROUPING AND TESTING

BLAMING THE VICTIM
William Ryan (Random House)

GENETIC DIVERSITY AND HUMAN EQUALITY
T. Dobzhansky (Basic Books)

HARVARD EDUCATIONAL REVIEW
Special Issues on the Rights of Children
Part I, November 1973; Part II, February 1974

INEQUALITY IN EDUCATION
July 1973 issue, Center for Law and Education, Harvard University

TOWARD QUALITY EDUCATION FOR MEXICAN AMERICANS
Report by U.S. Commission on Civil Rights

ARTICLES ON TESTING AND GROUPING

"A Critique of the 'Pathology' Model in Psychological Inquiry: Learning Disabilities and Cultural Deprivation"
Carolyn Saarni
New School of Education Journal
(Spring 1971, Vol. 2 No. 2)

"Cooperation and Competition in the Classroom"
Johnson, Johnson, Bryant
The Elementary School Journal
(December 1973, Vol. 74 No. 3)

"What's Deprived about Being Different?"
Thomas J. LaBelle
The Elementary School Journal
(October 1971, Vol. 72 No. 1)

"Good News: Research on the Nongraded Elementary School"
B.N. Pavan
The Elementary School Journal
(March 1973, Vol. 73 No. 6)

"Does Grouping Affect Motivation?"
Mary Heard Williams
The Elementary School Journal
(December 1972, Vol. 73 No. 3)

"The World's Children: Valuing Diversity"
Vito Perrone
Childhood Education
(November 1973, Vol. 50 No. 2)

"The Stranglehold of Norms on the Individual Child"
Lois Barclay Murphy
Childhood Education
(April 1973, Vol. 49 No. 7)

"Every Child a Teacher"
Gartner, Kohler, Riessman
Childhood Education
(October 1971, Vol. 48 No. 1)

"Testing Little Children: Some Old Problems in New Settings"
Henry Dyer
Childhood Education
(April 1973, Vol. 49 No. 7)

"The Mystique of Standardized Tests"
Bud Church
Open Education News (University of Connecticut at Storrs)
(October 1973, Vol. 3 No. 1)

"Cognitive Development: Some Pervasive Issues"
Frances Minor
Theory into Practice (Ohio State University)
(April 1973, Vol. 12 No. 2)

"Equal Educational Opportunity: Theory, Practice and Policy"
Dudley Blake
Theory into Practice
(February 1973, Vol. 12 No. 1)

"Gifted Children and Their Families"
E.M. Hitchfield
Where
(Number 51, September 1970)

LANGUAGE

THE ACQUISITION OF LANGUAGE
Bellugi and Brown, eds.
(University of Chicago Press)

A FIRST LANGUAGE -- EARLY STAGE
Roger Brown (Harvard University Press)

FUNCTIONS OF LANGUAGE IN THE CLASSROOM
Cazden, John and Hymes, eds.
(Teachers College Press)

FROM TWO TO FIVE
N. Chukovsky (University of California Press)

THE LANGUAGE OF PRIMARY SCHOOL CHILDREN
Connie and Harold Rosen (Penguin)

READING AND WRITING

THE EXCITEMENT OF WRITING
Alec Clegg (Chatto and Windus)

READING IN THE OPEN CLASSROOM
Ann Cook, Herb Mack, Ellen Blance
(Community Resources Institute)

YOUNG WRITERS, YOUNG READERS
Boris Ford (Hutchinson)

READING IN THE MODERN INFANT SCHOOL
Nora Goddard (University of London Press)

INFORMAL READING AND WRITING
Johnson and Tamburrini (Citation Press)

READING, HOW TO
Herbert Kohl (Dutton)

LEARNING HOW TO READ THROUGH EXPERIENCE
Doris Lee and R.V. Allen (Appleton Century Crofts)

LANGUAGE AND LEARNING TO READ
Hodges Rudorf (Houghton Mifflin)

COMMUNICATION AND LEARNING IN THE PRIMARY SCHOOL
Sealey and Gibson (Blackwell)

UNDERSTANDING READING
Frank Smith (Holt, Rinehart, and Winston)

ART

ART ACTIVITIES FOR THE VERY YOUNG
Lois Hower (Davis Press) Nursery School

IN THE EARLY WORLD
Elwyn Richardson (Random House)

STITCHERY
Nik Krevitsky (Rheinhold)

WORDS AND CALLIGRAPHY FOR CHILDREN
John Cataldo (Rheinhold)

BATIK
Nik Krevitsky (Rheinhold)

WIRE SCULPTURE
Gerald Brommer
(Davis)

SURFACE PRINTING
Peter Green (Rheinhold)

WEAVING WITHOUT A LOOM
Sarita Rainey (Davis)

CREATING WITH PAPER
Pauline Johnson
(Univ. of Wash. Press, Seattle)

CREATIVE PAPER DESIGN
Ernst Rottger (Rheinhold)

CREATIVE CLAY DESIGN
Ernst Rottger (Rheinhold)

ART FOR YOUNG CHILDREN
Louis Hoover (Davis)

FABRIC PRINTING
Kathleen Monk (Taplinger)

DESIGNING WITH LIGHT ON PAPER
Robert W. Cooke (Davis)

PLAY WITH LIGHT AND SHADOW
Herta Schonwolf (Rheinhold)

FILM ANIMATION FOR CHILDREN
Yvonne Anderson
(Van Nostrand-Rheinhold)

EXPLORING PAPIER MACHE
Victoria Betts (Davis)

CHILDRENS EXPERIENCES IN ART
Pearl Greenberg (Rheinhold)

ART IDEAS FOR YOUNG PEOPLE
Pearl Greenberg (Rheinhold)

PRINTMAKING WITH A SPOON
Norman Gobarty

AN ANNOTATED LIST FOR ART ACTIVITIES
BY MARIANN PEZZELLA WINICK

ART OF THE YOUNG CHILD
Jane Cooper Bland (Museum of Modern Art)
$2.50. The format of this book contains pictures of children working with materials as well as informative material on a wide variety of media. Helpful, informative book with many illustrations for working with young children

ART FOR THE FAMILY
Victor D'Amico (Museum of Modern Art)
$2.50. Companion volume to above book, this, however, deals with all age groups, most helpful for teachers and parents planning art activities

ART FOR TEACHERS OF CHILDREN
Chandler Montgomery (Charles Merrill)
$7.00. One of the most useful texts in art education. Many ideas that can be worked into classrooms with teachers of young children. Variety and stimulating ideas in Intermedia work.

CREATIVE TEACHING OF THE CREATIVE ARTS IN THE ELEMENTARY SCHOOL
James Smith (Allyn & Bacon) $3.00
Though this book deals with primary grades it is useful to teachers of young children in materials and ideas

FROM ADVENTURE TO EXPERIENCE THROUGH ART. Pauline Kagen (Chandler Publisher, 660 Market Street, San Francisco, California) $2.25. An excellent manual for building development art situations with crayon and paint. A must for all teachers at this price!

ART LEARNING EXPERIENCES AND SITUATIONS FOR ELEMENTARY EDUCATION. W. Alexander (Wadsworth Publishers, Belmont, California) approx. $6.00. This manual is most thorough as a collection of planned activities. A good guide and resource volume for frequent use even with preschool children

How To Do It Books for Adults and Children

WHITMAN CREATIVE SERIES IN PAINTING, CONSTRUCTION, PAPER
(Western Publishing Company) $1.00 per volume (9 in series). Excellent, colorful books for adults in the areas mentioned. Most useful

COLLAGE
Francis Brow (Pitman Publishing) $1.00
A good background book for adults in technique of collage and possibilities

MAKING MOBILES
A. & G. Moorey (Watson-Guptil Publishing) $1.95. A beautifully done, little book, clear and well-illustrated. Well worth the price

CREATING WITH CORRUGATED PAPER
Rolf Hartung (Rheinhold) $5.00
A useful book for planning paper projects. Good for resource library

MAKE YOUR OWN DOLLS
Strobl-Wohlshlanger
(Watson-Guptil Publishing) $1.00.
Excellent for parents. From cuddly dolls to puppets that are easy yet most artfully done

About Art Education

CHILDREN'S ART
Miriam Lindstrom
(University of California, Berkeley)
$1.50. A must in all art libraries.
Clear, comprehensive, well-illustrated

MUSIC AND MOVEMENT

Song Books

NIGHT SONGS AND LULLABIES
Alex Wilder (Harper)

BALLADS, SONGS AND SNATCHES
Heig Shakerjian (Harper)

ECHOES OF AFRICA
SONGS TO GROW ON
MORE SONGS TO GROW ON
Beatrice Landeck (David MacKay)

ANIMAL FOLK SONGS FOR CHILDREN
AMERICAN FOLK SONGS FOR CHILDREN
Ruth Seeger (Doubleday)

SONGS BELAFONTE SINGS
Harry Belafonte (Duell, Sloan and Pearce)

SONGS OF THE AFRICAN VELD
Josef Marais (G. Schirmer)

A FIESTA OF FOLK SONGS FROM SPAIN AND LATIN AMERICA
Henrietta Yurchenko (G.P. Putnam)

FOLK SONGS USA
John & Alan Lomax
(Duell, Sloan & Pearce)

Movement Books

LEARNING THROUGH MOVEMENT
Betty Rowan (Teachers College Press)

MUSIC, MIME AND MOVEMENT FOR CHILDREN
Gray and Percival (Oxford University Press)

AND A TIME TO DANCE
Norma Canner (Beacon Press)

MATERIALS OF DANCE
Barbara Mettler (Mettler Studios, Box 4456, University Station, Tuscon, Arizona)

MODERN EDUCATIONAL DANCE
Rudolf Laban (Praeger Publishers)

CREATIVE DANCE IN THE FIRST THREE GRADES
Joyce Boorman (David MacKay)

CHILDREN DANCE IN THE CLASSROOM
Geraldine Dimondstein (Macmillan)

CREATIVE DANCE IN THE PRIMARY SCHOOL
Joan Russell (Praeger Publishers)

CHILDREN AND MOVEMENT
Diana Jordan (Basil Blackwell)

MUSIC AND MOVEMENT FOR YOUNG CHILDREN
Miriam Stecher (Macmillan)

TEH ART OF LEARNING THROUGH MOVEMENT
Anne & Paul Barlin (Ward Ritchie Press)

SCIENCE

ESS (Elementary Science Study), a series of 56 units, containing teacher's guides, booklets for students, worksheets, problem cards, photographs, films or film loops. Supplementing these are: A MATERIALS BOOK FOR ESS and A WORKING GUIDE TO ESS, produced and distributed by Education Development Center, 55 Chapel St., Newton, MA 02160.

TEACHER'S GUIDE I; TEACHER'S GUIDE 2; APPARATUS: A SOURCE BOOK OF INFORMATION AND IDEAS. Also the following teacher's background booklets: MAMMALS IN CLASSROOMS;. SCIENCE AND HISTORY; AUTUMN INTO WINTER
Nuffield Junior Science (Agathon Press)

SCIENCE 5/13
A series of 21 units in progress (first 7 titles now available) for teachers of children, ages 5 to 13. Distributed in the U.S. by Purnell Library Service, 850 Seventh Ave., New York, NY 10019

MATH

TOPICS FROM MATHEMATICS
Josephine Mold
(Cambridge University Press)

NUFFIELD MATHEMATICS PROJECT
(John Wiley & Sons)

MATHEMATICS FOR OLDER CHILDREN
Edith Biggs (Citation Press)

A MILLION TWOS
Julia Hirsch
(Learning Centers Project
School District of Philadelphia)

FUN WITH LINES AND CURVES
Elsie C. Ellison
(Lothrop, Lee and Shepard Co.)

TEACHING SCHOOL MATHEMATICS
W. Servais and T. Varga
(Penguin Books - Unesco)

LEARNING TO THINK IN A MATH LAB
Manon P. Charbonneau
(National Association of Independent Schools, Four Liberty Square, Boston, Massachusetts)

FREEDOM TO LEARN: AN ACTIVE LEARNING APPROACH TO MATHEMATICS
Edith Biggs and James MacLean
(Addison-Wesley, Canada Ltd.)

THE STORY OF THE METRIC SYSTEM
S. Carl Hirsch (The Viking Press)

COUNTING AND MEASURING
Eileen M. Churchill
(Routledge & Kegan Paul)

INQUIRY IN MATHEMATICS VIA THE GEO-BOARD
Donald Cohen (Walker)

MATHEMATICS FOR SCHOOLS
Harold Fletcher
(Addison-Wesley Publishers Ltd.)

AFRICA COUNTS
Claudia Zaslavsky
(Prindle, Weber & Schmidt)

KITES: A SELECTED BIBLIOGRAPHY

KITES
W. Brummitt (Western Publishing Co.)$1.50

KITES: AN HISTORICAL SURVEY
Clive Hart (Praeger) $12.50

25 KITES THAT FLY
Leslie Hunt (Dover Publishers) $1.25

CHINESE KITES: HOW TO MAKE AND FLY THEM
David F. Jue (C. E. Tuttle Co.)

CURIOUS GEORGE FLIES A KITE
M. Rey (Houghton-Mifflin Co.)

HIGH FLIERS: COLORFUL KITES FROM JAPAN
Tadao Saito (Tokyo: Japan Publishers)

GO FLY A KITE, CHARLIE BROWN
C. M. Schultz (Holt, Rinehart & Winston)

FLYING KITES: IN FUN, ART, AND WAR
James Wagenvoord (Macmillian Co.)
Excellent photographs, especially for telling the story to young children

"Wind, Art, and Kites"
Grade Teacher
(Vol. 86, March 1969)

"India Fighter Kites: A Simple Introduction to Kite-Flying"
(available from Go Fly a Kite Store, N.Y., NY

"Both Craft and Sport: Building and Flying Kites"
A. Brooks
Times Education Supplement
(Vol. 2951: 34, Dec. 10, 1971)

WEAVING

WEAVING IS CREATIVE
Jean Wilson

ART FROM FOUND MATERIALS
Mary Lou Stribling
(Crown Publishers)

WALL HANGINGS: DESIGNING WITH FABRIC AND THREAD
Sarita R. Rainey
(Davis)

INTRODUCING WEAVING
Phyl Shillinglaw

SOURCES FOR TIE-DYE, BATIK AND CANDLE MAKING

Aljo Manufacturing (Aljo Dyes)
116 Prince Street, N.Y., NY

Empire Color Chemical Company
206 Sprint Street, N.Y., NY
(one pound minimum order)

Fezandie and Sperrle ($10 minimum)
103 Lafayette Street, N.Y., NY

Gothic Color Company, Inc.
727 Washington Street, N.Y., NY

Joseph Torch Art Store
29 West 15th Street, N.Y., NY

Sam Flax Art Stores
25 East 28th Street, N.Y., NY
551 Madison Avenue, N.Y., NY

Fabrics: silk, cotton, linen, wool, rayon, silk chiffon, China silk, cotton organdy, cotton batiste, unbleached muslin, percale, velvet, and terry cloth are some of the fabrics commonly used to batik and tie-dye materials. Inexpensive fabric stores can be found along 14th Street, between the Union Square area and 7th Avenue in Manhattan. Many of New York's scrap fabric suppliers are located on Greene Street in Manhattan. They sell scrap cloth usually by the pound.

Aljo Dyes are of four types: for cotton and rayon, for silk and wool, for paper, leather, and suede, and for acetate and nylon. Prices generally are 65-75¢ for 1/2 ounce, $2.00 - $2.25 for 4 ounces, $3.50 - $3.75 for 1/2 pound, and $6.00 - $6.50 for one pound.

Rit, Tintex, and Drummer dyes can be bought in most variety stores. *Paraffin* in 10 pound slabs cots around $3.00 *Beeswax* is about double that. *Tjanting* ("chahn-ting"), the Javanese tool used for fine-line work, costs from $4.00 - $5.00 each. It comes with fine, medium, and broad points.

MATH GAMES

There are literally thousands of math games. Though many of them are similar, they can be classified, depending on their stress, into broad math areas such as sets, number sequence, combining and separating groups, relationships, and estimation.

Many commercial games can be handmade using free or inexpensive materials. Making your own games allows for modifications to fit individual learning needs. Keep in mind the other side of the coin: if you take 10 hours to make a $1.00 game, how much is your time worth per hour?

Learn and play the game before you give it to the children.

The following are a few useful math game sources:

WORKJOBS
Mary Baratta Lorton
(Addison-Wesley Publishers)

THE CENTER # 2 (Magazine)
(Teachers' Center at Greenwich, Conn.)

EUREKA
Dale Seymour and Richard Gidley
(Creative Publishers, Inc.)

PLUS: A HANDBOOK FOR TEACHERS OF ELEMENTARY MATH
Edited by Mary E. Platts
(Educational Service, Inc., Benton Harbor, Michigan)

THE NUFFIELD MATHEMATICS PROJECT
Organized by Geoffrey Matthews
(John Wiley and Sons, Inc.)

AFTERMATH # 1-4
Dale Seymour et. al.
(Creative Publishers, Inc.)

TANGRAMATH
Dale Seymour
(Creative Publishers, Inc.)

MATH ACTIVITY POSTERS
Joseph Payne, et. al.
24 math games each consisting of a poster and 5 game boards
(Harcourt, Brace and Jovanovich)

PIC-A-PUZZLE
Schadler and Seymour
(Creative Publishers, Inc.)

PALATABLE PLOTTING
Patrick Boyle
(Creative Publishers, Inc.)

GRAPH GALLERY
Patrick Boyle
(Creative Publishers, Inc.)

NUMBER SENTENCE
Dale Seymour
(Creative Publishers, Inc.)

MATH ACTIVITY
Mary Laycock and William Stokes
(Creative Publishers, Inc.)

"Math Games"
Celia Houghton
NOTES FROM THE WORKSHOP CENTER FOR OPEN EDUCATION (March 1973)

STANLEY CHU

Scrap Materials

Lumber Supply Companies
scrap wood, damaged bricks, concrete blocks, doweling

Hardware Stores
sample wallpaper books, sample tile charts, linoleum samples

Rug Companies
sample swatches, end pieces from rugs cut to size for a customer

Contractors
You can make arrangements for someone from the school to go to a construction site when they are finishing a job. They will let you collect from the scrap building materials.

lumbers	linoleum	pipes & wire (great variety)
tiles	wallpaper	molding wood

Supermarkets
cartons, packing material, fruit crates, large cardboards and materials from displays, discarded cardboard display racks

Department Stores
fabric swatches (drapery and upholstery samples), rug swatches, corrugated packing cardboard

Phone Company-Public Relations Department
excess colored wires

Electric Power Company-Public Relations Department
Wire, large spools that can be used for tables, assorted packing materials

Garment Factories
A great source for accumulating a wide variety of material, i.e. yarns, buttons, decorative tape

Plastics Company
Trimmings, cuttings, tubing, odd shapes

Leather Craft Company--Shoe Factory
Scrap pieces of leathers and lacings

Plumbers
wires, pipes, tile scraps, linoleum

Paper Companies
For unusual kinds of paper, which are often available free in the form of samples, end cuts, damaged sheets

Metal Spinning Company
Shavings, also scrap pieces

Junk Yard
Unlimited possibilities: wheels, all shapes and sizes, all kinds of gears and moving parts from clocks, radios, fans, cars, irons, toasters. Handles: from drawers, doors, cars, knobs, broomsticks. Hinges and fittings.

Tile and Ceramics Company
Tile by the pound (inexpensive) and broken pieces.

Around your own home--"Beautiful Junk"
Boxes of all kinds--egg cartons, milk cartons, cookie trays, vegetable cartons and trays, match boxes.
Plastic bottles, boxes, and jugs--chlorox boxes, ice cream cartons, detergent bottles, cheese containers, margerine containers.
Cardboard tubing from toilet paper, paper towels, wrapping paper.
Broom handles, spools, bottle caps, lids, pipe cleaners, elastic bands.
Cloth--various textures and colors: silk, lace, organdy, net, nylon, etc.

NON-SEXIST BOOKS FOR GRADES K-3

A non-sexist bibliography, for the most part, will avoid role stereotypes, encourage children to identify with others while developing their own "specialness," help them experience and express positive and negative feelings, suggest a wide range of job and life-style alternatives and present many female characters in roles of importance to offset the preponderance of books about males. Needless to say, not all books on this list can, or should accomplish all of these objectives, but a careful and balanced choice among them might. Keep in mind, when reading to non-readers, that "he" can be changed to "she" (as in the *Ant and Bee* series) and sexist passages in an otherwise acceptable book can be eliminated, so long as this is done consistently. The problem of sensitive text and sexist illustrations (as in *Janey* by C. Zolotow) can perhaps be handled through discussion. Asterisks reveal my own particular preferences; dollar signs, those most likely found in book stores (popular or recently published), and an equal sign for those books which include ethnic minorities (in this country) as important characters.

-- DONNA BARKMAN

* ARTHUR'S CHRISTMAS COOKIES
Lillian Hoban (Harper & Row)
1972, $2.50

* A BABY SISTER FOR FRANCES
* A BARGAIN FOR FRANCES
* A BIRTHDAY FOR FRANCES
* BEDTIME FOR FRANCES
* BEST FRIENDS FOR FRANCES
Russell Hoban (Harper)

$ GIRLS & BOYS, BOYS & GIRLS
Eve Merriam

$ FIREGIRL
Gibson Rich (The Feminist Press)

$ HARLEQUIN AND THE GIFT OF MANY COLORS
Remy Charlip (Parents' Magazine Press) 1973, $4.50

* I LOVE GRAM
Ruth Sonneborn (Viking)

$* NOISY NANCY AND NICK
$* NOISY NANCY NORRIS
Lou Ann Gaeddert (Doubleday)

$* NOTHING BUT A DOG
Bobbie Katz (Feminist Press)
1972, $1.50

$* SYLVIE SUNFLOWER
Alica Bay Laurel (Harper)
1972, $1.25; also Ms. Magazine, Jan. 1973

* APT. 3
Ezra Jack Keats (Macmillan) 1971

$* BODIES
Barbara Brenner (E.P. Dutton)
1973, $4.95

$ BUSY PEOPLE
Joe Kaufman (Golden Press) 1973
$3.95

$ THE BOY WHO DIDN'T BELIEVE IN SPRING
Lucille Clifton (E.P. Dutton) 1973
$5.95; also Ms. Magazine, Aug. 1973

$ CARNATIONS (a coloring book)
Julie Corsover (Philadelphia Women's Political Caucus, 640 Rodman St., Philadelphia, Pa. 19147) $1.25

$ GIRLS CAN BE ANYTHING
Norma Klein (E.P. Dutton) 1973
$4.50

* HURRAY FOR CAPTAIN JANE
Sam Reavin (Parents) 1971, $3.95

= HARRIET AND THE PROMISED LAND
Jacob Lawrence (Windmill) 1968

$* I'M LIKE ME (poetry)
Siv Widerberg (The Feminist Press)
1973, $1.50

$* IRA SLEEPS OVER
Bernard Waber (Houghton Mifflin)
1972, $4.95

Trip List

Children's Art Carnival, 641 St. Nicholas Ave. (234-6266) FREE
You can make a series of visits (usually 3 in a row) or single visits. Children are involved in art activities -- puppets, mobiles, collages, paintings -- which they then take home. You can do a more elaborate project like papier mache masks which takes several days if you ask for a series of appointments.

John Bowne High School and Farm, Main St., Queens (263-1919) FREE
Ask for Mr. Clasterin at this high school for agriculture which sponsors a guided tour of the farm. Nice trip for Spring.

Shadow Box Puppet Theater, Riverside Church (749-7000 or 866-0591)
3 or 4 shows a year (Thanksgiving, Christmas, etc.). Suitable for K and 1st and maybe 2nd graders. Cost is 25¢ per child. Also, you can go up to the bell tower of the church if you wish and get a beautiful view of N.Y.

High Rock Conservation Center, 200 Nevada Ave., Staten Island (987-6233)
Write to Mrs. John Dicke, giving name of teacher, grade, dates preferred (but not guaranteed). 72 acre forest and environmental education center. Guided tour. Only two classes per school are allowed appointments. *FREE.*

Jamaica Wildlife Refuge, Cross Bay Blvd. (360-8120) FREE
Natural habitat for birds and marine life. Guided tours. Write to: Director of Maintenance and Operation, P.R.C.A., 830 5th Avenue, N.Y. 10021.

Ice Skating, Central Park and Prospect Park (Brooklyn)
Lasker Rink - 110th & Lenox Ave. Skate rental 75¢, (348-6297), Mr. Kenney.
Wollman Rink - 64th & 5th Ave. (360-8260)
Wollman Rink - Prospect Park (287-1122)

Marionette Theater, Swedish Cottage, Central Park, 79th St. & CPW FREE
Department of Recreation (933-1422). Puppet shows.

Nature Walk Tours, Central Park Zoo FREE
Ask for Mrs. Kratovil (288-6942). There are different hours, e.g., Predators and Prey. Indoors - in all weather.

The Mill, Burlington House, 1345 6th Ave. (333-3622)
Short but interesting tour -- how fabric is made.

Town Hall, 123 West 43rd St. (582-2424)
Productions for children - usually $1.00 per child.

Police Academy and Museum, 235 East 20th St. (677-1133 Ext. 300) FREE
Guided tour - usually 3rd grade and up.

Hall of Science, Flushing Meadow, 111th St. & 48th Ave., Corona, Queens FREE
Flushing Meadow Park (can picnic) (699-9400)

Bronx Zoo (933-1759) or (933-1500)
Reservations are not necessary any more.

Bronx Botanical Gardens (933-9400) or (584-8400) FREE

Brooklyn Botanical Gardens, 1000 Washington Ave., Brooklyn (622-4433) FREE

Staten Island Zoo, 614 Broadway, Staten Island (442-3100) FREE

Metropolitan Museum of Art, 5th Ave. & 82nd St. (879-5500)
Closed Mondays.

Museum of American Folk Art, 49 West 53rd St. (581-2474)
Closed Mondays.

Museum of Contemporary Crafts, 29 West 53rd St. (246-6840)
Closed Mondays.

Museum of Primitive Art, 15 West 54th St. (246-9493)
Wednesday - Friday, 11 a.m. to 5 p.m.

Museum of the City of New York, 5th Ave. & 103rd St. (534-1672)
History and culture of NYC, lectures, "Please Touch" exhibit, demonstration gallery tours. Closed Mondays.

Museum of the Performing Arts, Lincoln Center, 111 Amsterdam Ave. (799-2200)
Closed Fridays.

Museum del Barrio, 206 East 116th St. (831-7272)

Museum of the American Indian, Broadway & 155th St. (283-2420) FREE
Opens at 1:00 p.m., Tuesday - Friday. 4 floors of Indian arts and artifacts.

Brooklyn Museum, Eastern Parkway & Washington Ave. (638-5000)
Wednesday - Friday.

Brooklyn Muse, 1530 Bedford Ave. (774-2986 or 774-2900) FREE
Special children's storefront museum of Brooklyn Museum; can touch, etc. Closed Mondays.

Hispanic Society of America, Broadway & 155th St. (926-2234)
Next door to American Indian Museum; Spanish art. Closed Mondays.

Fire Engine Museum, 104 Duane Street (Between Broadway & Church) (744-1000)
Authentic fire-fighting equipment; guided tours; film, etc. *FREE*

South Street Seaport Museum, 203 Front St., Fulton St. (349-4310) 12 to 6
Exhibits of sailing vessels and power vessels. Group tours must be arranged in advance. Children can go aboard boats. Also, Marine Museum nearby, 25 South Street, (269-2710 Ext. 59). *FREE*

American Museum of Natural History, CPW at 79th St. (873-1300)
Planetarium (60¢); Natural Science Center now open again: 2nd floor, Education Building, 77th St. entrance. Call Registrar's office - ask for Daphne

Prior - to make reservations.

Aquarium, Surf Ave. & West 8th St., Coney Island, Brooklyn (266-8540)
Call on Tuesday, Wednesday or Thursday between 10 and 4. There is a fee.

ASPCA, 441 East 92nd St., corner York Ave. (876-7700) FREE

Essex Street Market (566-3980) FREE
Write to Commissioner of Markets, 137 Center Street, N.Y. 10013 or call above number. Market (fruit and vegetables) opens Monday & Friday at 9:00a.m., Tuesday & Wednesday after 1:00 p.m., Thursday before 1:00 p.m.

ELLI DUMONT

A Teacher's Reaction

The personal growth and enjoyment that I experienced while participating in the workshops have brought into clearer focus the ways in which children learn: 1) learning by doing, 2) building on what they already know and what they have experienced, and 3) learning best in an environment relatively free from competition and testing. The workshops permitted me, as an adult student, to enjoy the benefits of learning in these ways.

I attended Center workshops at the end of a long working day which started with a Physics class at City College at 9:00 a.m. and included an afternoon of teaching nursery school. By 4 o'clock, the time of day when I usually experience a pre-dinner slump, I would arrive at the Center dead tired. But I found that I immediately became totally involved in the workshops, and when I left I felt exhilarated and rested.

Recapitulating my participation in 11 workshops on a wide variety of themes ranging from art to recordkeeping, I find that I remember those ideas, and have gained those skills, that came through my active participation. It is true that I can look through my notes and say, "Oh yes, now I remember that she (the workshop leader) said that." I imagine I could even do fairly well on a test covering the material. I have a strong feeling, however, that in the heat of teaching I will draw on those ideas and those skills that I now possess because of my own active participation and, in many cases, concrete experience.

The way, then, to make the content of my copious notes on these workshops truly my *own* tools in teaching is clear: It requires that I pick out the items that I see as applying to my own teaching situation and use them in the classroom.

The absence of testing in the workshops made a positive contribution to learning. It gave me a chance to apply my whole intelligence to learning those things which will help me develop as a teacher, rather than forcing me to apply a good part of my mental energy to figuring out what the "course requirements" were or what would be on the test, which is so often the case with students from primary school through college.

The non-testing aspect of the workshops also gave me the freedom to enjoy particularly the two workshops on music which I attended. Music had always been an area of frustration for me since my first failure in grade school music. But at the Center I not only enjoyed the workshops on music, I gained much content from them and, even more, the courage and incentive to continue to work actively on the autoharp, piano, and vocal training.

By practicing what they preach, the workshop staff has set a good example for me as a teacher. What is more, their approach and their style offered additional proof, if more is needed, that children learn best in an individualized, noncompetitive environment through their own concrete experiences. I could not have learned the things I learned in the workshops by reading books on open education or by attending lectures. The environment of the workshop -- not so much the bits of knowledge accumulated -- was necessary to what I view as my own personal growth as a teacher.

WILMA JAFFE

Center Publications

I LIKE THE WAY I AM RIGHT NOW by Jose Luis Pizarro	$ .50
THE WORKSHOP CENTER SAMPLER, edited by Ruth Dropkin	$2.00
TEACHING BILINGUAL CHILDREN, edited by Arthur Tobier	$2.00
SCIENCE IN THE OPEN CLASSROOM, edited by Ruth Dropkin	$2.00
EVALUATION RECONSIDERED, edited by Arthur Tobier	$2.00
EXPLORATIONS OF VISUAL PHENOMENA by Eleanor Dimoff	$1.50
READING FAILURE AND THE TESTS by Deborah Meier	$ .75
THE OPEN CORRIDOR PROGRAM - Handbook for Parents	$ .50
THE OPEN CORRIDOR PROGRAM - Spanish version	$ .50
NOTES FROM WORKSHOP CENTER FOR OPEN EDUCATION, 1-Year Subscription, beginning with Fall 1974 issue	$4.00
NOTES FROM WORKSHOP CENTER FOR OPEN EDUCATION (Back issues) each	$1.00
10 MONTHLY CALENDARS	$1.00
THE WCOE - A Descriptive Brochure	$ .25

Payment must accompany order. Please make checks or money orders payable to Workshop Center for Open Education.